2024 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

Date: June 2024

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Executive Summary: Air Quality in Our Area

Air Quality in Portsmouth

Being an island city with only three roads on and off the island, Portsmouth faces unique challenges in improving Local Air Quality (LAQ). It is recognised that air pollution has negative effects on health and can have a disproportionate impact on the most vulnerable in society such as children, older people, and those with pre-existing medical conditions.

Portsmouth City Council (PCC) recognises the importance of reducing harmful levels of Nitrogen Dioxide (NO_2) and is keen to continue to build on the progress already made in respect to improving LAQ, delivering a package of measures which will contribute positively to the health of its residents, employees, and visitors to the city.

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Those who are already socially disadvantaged tend to be exposed to higher levels of pollutants, and therefore experience more severe consequences. For example, areas of deprivation tend to be located closer to heavy road traffic (where air quality is worse). Those of lower socioeconomic status are also more likely to be living with pre-existing factors, such as obesity and heart disease, which exacerbate the effects of air pollution, whilst also being more likely to smoke. Our 5 Air Quality Management Areas (AQMAs) largely sit in the most deprived and densely populated areas of the city.

As one of the most densely populated cities outside London, the cumulative impacts of polluted air on the health of the local population are substantial. In 2017, around 3% of the Portsmouth population lived within an Air Quality Management Area. The UK Health Security Agency have estimated air pollution vulnerability for Portsmouth as follows:

- 51% of the Portsmouth population are estimated to be in the most vulnerable deciles for air pollution, scoring 9 and 10 (around 110,022 people).
- Around 82% of the population were in the top 4 deciles of vulnerability.

Those with the greatest exposure are also the lowest emitters. Despite being one of the most polluted areas of the city, in the most deprived areas in Charles Dickens (our most deprived ward) the majority of households don't have access to a car.

Travel in the city is a major contributor to air pollution so the type of transport we choose for our journeys can help to improve our LAQ. PCC is therefore continuing to make transport improvements to the city, including safer cycling routes and facilities to make it easier to choose this way of travelling, improving public transport connectivity with the wider region, and providing electric charging points for residents choosing greener vehicles. Despite the work that has and continues to be undertaken, we still however face challenges to reduce the concentrations of harmful pollutants in the air.

This 2024 Annual Status Report (ASR) published by PCC does not seek to provide comprehensive detail on all Local Air Quality Management (LAQM) related activities in Portsmouth during 2023. The primary purpose of this document is to report upon the levels of pollution from monitoring data obtained during 2023 and provide a comparison with data sets from previous years and the relevant National Air Quality Objectives (NAQO), therefore other publications and reports should be read in conjunction with this report into actions taken to reduce pollution concentrations.

As a result of impacts from COVID-19 and the associated restrictions on activity / mobility during 2021 this document continues to remind readers of the Department for Environment and Rural Affairs (Defra) guidance published in April 2021 with respect to LAQM duties, as described in Part IV of the Environment Act 1995. Defra recognises that air pollutant concentrations will have been impacted by the change in activity observed across the United Kingdom (UK) as a result of COVID-19 and the Government's associated measures to combat community transmission of this virus.

The impact of COVID-19 is highly likely to have led to changes in compliance with Air Quality Strategy NAQO in AQMAs since 2020 and impacted upon any increases in pollution in 2023 when compared directly with the previous reporting years of 2020 and 2021.

When considering the 2023 data provided within this ASR, PCC therefore continues to recommend exercising some caution in interpreting the efficacy of improvement measures on LAQ, over the last 5 years as it is likely that restrictions on activities will have had a notable impact on measured concentrations following the Government's lockdown measures, restrictions and advice.

We know that breathing in polluted air affects our health and costs the National Health Service (NHS), and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality. In the UK, it is estimated that the reduction in healthy life expectancy caused by air pollution is equivalent to 29,000 to 43,000 deaths a year[1]. In 2022, the proportion of adult deaths attributable to long-term exposure to particulate air pollution in Portsmouth was 6.2% (over 1 in 20 deaths), compared to an England value of 5.8%.

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Additionally, people living in less affluent areas are most exposed to dangerous levels of air pollution[2].

Table ES 1 provides a brief explanation of the key pollutants relevant to Local Air Quality Management and the kind of activities they might arise from.

Table ES 1 - Description of Key Pollutants

Pollutant	Description
Nitrogen Dioxide (NO_2)	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO_2)	Sulphur dioxide (SO_2) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Particulate matter is everything in the air that is not a gas. Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes.

[1] UK Health Security Agency. Chemical Hazards and Poisons Report, Issue 28, 2022.

[2] Defra. Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

	PM_{10} refers to particles under 10 micrometres. Fine particulate matter or $PM_{2.5}$ are particles under 2.5 micrometres.

Attributing health outcomes from exposure to individual constituent pollutants in emissions is not simple. This supports the need to tackle emissions in general and not necessarily to focus on individual pollutants. However, with reference to the limit and target values, the main pollutant of concern in Portsmouth is Nitrogen Dioxide (NO_2).

In 2018 a different assessment regime of the European Union (EU) Directive on air quality led to an obligation on PCC to develop a plan to tackle exceedances where these have been identified by the Department for Environment, Food and Rural Affairs (Defra). This was in addition to where we have previously identified pollution hotspots and where we have been monitoring pollutant levels for many years.

Consequently, since 2018 parts of Portsmouth not previously assessed under the LAQM regime and where there is an absence of long-term public exposure (pavements alongside busy roads with no nearby relevant exposure as identified in the 2018 Local Air Quality Management Technical Guidance (LAQM.TG (16)) became a new focus. The main areas of concern centred around Alfred Road between Hope Street roundabout and the Queen Street / Anglesea Road / Alfred Road intersection, Mile End Road between the southern end of the M275 and Church Street roundabout, and Market Way.

In addition to deploying monitoring devices along the above-named roads, since 2019 PCC maintained the number of Nitrogen Dioxide Diffusion Tubes (NDDT) monitoring locations around the city to reach 234 locations. The reason for this is threefold:

- Firstly, as a consequence of Defra's interest in new geographic areas where exposure to NO_2 is possible.
- Secondly, to assess the impact of PCCs activities to reduce NO_2 over the longer-term.
- Thirdly, and most recently, to monitor and evaluate the introduction of the Clean Air Zone (CAZ) introduced in November 2021.

This increased level of monitoring has continued to enable a higher resolution picture to be formulated with respect to NO_2 concentrations than that which was available in previous years. Consequently, this has created a materially different narrative with respect to areas of exceedance which exist.

PCC has for many years retained 5 AQMAs declared on the grounds of monitored or modelled exceedances of the NO_2 Annual Mean NAQO. It is our intention to:

- Keep all these areas under review. We have no intention to revoke AQMAs even where levels have been recorded in compliance with the NO_2 Annual Mean NAQO. Currently, the primary reasons for this are the uncertainties presented in respect to the efficacy of pollution data collected during the COVID-19 pandemic and the comparison of data sets during the reportable years 2019, 2020 and 2021 (and perhaps to some limited extent at the beginning of 2022).
- Not to declare new AQMA in the newly identified areas in excess of NO_2 Annual Mean NAQO levels as there is no immediate relevant exposure within these areas.

Actions to Improve Air Quality

Whilst air quality (AQ) has improved significantly in recent decades, there are some areas where local action is needed to protect people and the environment from the effects of air pollution.

Following the lead of the Chief Medical Officer in his 2022 annual report (Chief Medical Officer's Annual Report 2022: Air pollution. Department of Health and Social Care, December 2022, taking a hierarchy approach - prevent, mitigate, avoid) is a useful way to consider what the interventions to improve air quality are aiming to achieve. It should be stressed that no single intervention is a solution on its own; rather it is the cumulative impact of many interventions working together and the context which is important.

Evidence-based actions to prevent air pollution include active travel (promotion of walking, cycling, public transport; prioritising and promoting active travel over other forms of transport in policy) and electrification of transport (cars, buses/trams, trains, shipping). Actions to mitigate include urban planning and policy to reduce emissions and concentrations of air pollution - siting heavy industry away from urban areas; low emissions zones / low traffic neighbourhoods; smoke-control zones; expanding public transit systems; clean construction; increased green infrastructure to capture pollutants; reducing waste / landfill emissions; and managing traffic flow. Clean energy and building efficiency in terms of housing, public buildings, and businesses can also lead to air quality gains. Actions to avoid air pollution include a focus on behaviour change - training health and social care staff to give information to patients; individuals increasing active travel; avoiding polluted routes; and anti-idling campaigns/smooth driving. For indoor air quality,

interventions include stopping smoking; and reduced usage of polluting wood-burning stoves. Comprehensive air quality monitoring, such as that explained and identified within this report can also contribute to avoidance.

The Environmental Improvement Plan[3] sets out actions that will drive continued improvements to AQ and to meet the new national interim and long-term targets for fine particulate matter ($PM_{2.5}$), the pollutant most harmful to human health. The Air Quality Strategy[4] provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas.

The Road to Zero[5] details the Government's approach to reduce exhaust emissions from road transport through a number of mechanisms, in balance with the needs of the local community. This is extremely important given that cars are the most popular mode of personal travel, and the majority of AQMAs are designated due to elevated concentrations heavily influenced by transport emissions.

The Local Air Quality Plan Outline Business Case (OBC) published in 2019 set out PCC's approach to achieving compliance with legal limits for NO_2 at all locations citywide, leading to a healthier environment for all. The Plan was produced in response to the Ministerial Direction issued to PCC on 4th October 2018, requiring us to develop a plan which identified how compliance with legal limits for nitrogen dioxide can be achieved in the shortest possible time.

The OBC technical work led to a preferred package of measures to achieve the primary objective of delivering a scheme that leads to compliance with NO_2 concentrations in the shortest possible time, without significantly worsening emissions elsewhere.

The Portsmouth CAZ went live on November 29th, 2021. The CAZ operational figures are therefore outlined within this report. These are based off Automatic Number Plate Recognition (ANPR) data captured by cameras on the border, and inside, the zone.

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[3] Defra. Environmental Improvement Plan 2023, January 2023

[4] Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

[5] DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018

Only certain vehicles are subject to a charge in Portsmouth's CAZ. These are non-compliant (meaning older than Euro 6 if diesel, and Euro 4 if petrol) buses, coaches, taxis, private hire vehicles and heavy goods vehicles (including some larger motorhomes).

Tackling air pollution goes beyond these measures, as recognised by Local Transport Plan 4 (adopted in October 2021) which sets out our priority towards sustainable travel such as cycling, walking and public transport, which will help us to develop cleaner air and healthier lifestyles for everyone who lives, works, visits and studies in Portsmouth. For example:

- A newly launched car club provides more affordable shared access to a car for when people need it. This gives people more ways to travel that keep the air in Portsmouth cleaner. Some of these schemes are just beginning, and their full impact on improving AQ will only be seen once they are fully up and running.
- The introduction of 'shore power' at the Portsmouth International Port (PIP) will also help to improve AQ in other areas of the city. The PIP has won a £20 million grant from the government, unlocked by £7m of investment from the council, which will mean ferries and cruise ships can run on electricity from the grid when in port and turn off their engines. This ground-breaking new system will be ready for use in early 2025.
- To reduce exposure to air pollution people are encouraged to choose quieter walking and cycling routes. Research has shown the place people are most exposed to air pollution is while sitting in a vehicle queuing in traffic, so people can make a positive difference for themselves by choosing an alternative way of travel.
- Also, educating drivers that they can contribute to reducing air pollution by simply switching off their engines when stationary or making sure auto stop is activated on newer vehicles.

Challenges

There are several key challenges to successful implementation of planned schemes, as well as future work planning including:

- We’ll keep pushing to improve the transport options in the city and remind everyone that if everyone can make a small change to how they travel, even if it’s just one journey, the impact across the city would be of huge benefit to everyone.
- Securing long-term funding which directly supports delivery AQ interventions.

- Ensuring we have the staff and expertise to deliver schemes and monitor the AQ impact.

Future Work in 2024

There are a range of strategic schemes underway, all of which may directly and indirectly have a positive influence on AQ:

- Delivering Local Electric Vehicle Infrastructure (LEVI) funding that has been allocated to Portsmouth, through our Electric Vehicle Infrastructure Strategy.
- Launching Round 3 of the Workplace Sustainable Travel Fund.
- Continuing to expand the Solent Future Transport Zone and the successes of the E-scooter and Bike Share projects, whilst continuing to explore options such as micro/macro logistics and drone logistics.
- There are also a range of possible work options to explore for inclusion in further iterations of the Air Quality Action Strategy, including a thorough review of the Strategy itself which is now underway.

LAQ Monitoring Conclusions

PCC has frequently revised its non-automatic monitoring of NO_2 network via NDDT, expanding it to reach 233 sites as a result of the additional monitoring requirements of the CAZ. The expansion of NDDT monitoring network has however occurred consistently since 2017 as summarised* below:

- 27 sites prior to 2017.
- 76 additional monitoring sites were deployed in the period 2017-2018 (103 sites in total).
- 41 additional monitoring sites were deployed in 2019 (144 sites in total).
- 17 additional monitoring sites were deployed in 2020 (161 sites in total).
- 67 additional monitoring sites were deployed 2021 to specifically assess the performance of the CAZ (228 sites in total excluding the six co-location sites).

* The number of locations may have been subject to change during each year.

An expansion of the Continuous Air Quality Monitoring Station (CAQMS) network occurred in 2020, increasing the PCC network from four to 5 CAQMSs. The additional station was installed in Alfred Road to further assess the impact of the CAZ.

The impact of the increasing demands for data upon the existing staffing resource of 1 FTE created significant problems in respect to mandatory reporting during 2021 and 2022. This resourcing issue has been carefully considered and additional funding has now been provided to Regulatory Services (RS) to secure additional personnel to maintain our existing Review and Assessment (R&A) requirements and the further reporting needs which have arisen as a result of the CAZ.

The 2023 LAQ monitoring concluded the following:

1. **NDDT NO_2 Annual Mean**

The NDDT survey covered 228 sites (excluding the six Co-location sites) where monitoring was carried out for the past three years in some locations while others were monitored for four and 5 years.

The 2023 NO_2 Annual Mean levels were **in excess of the NO_2 Annual Mean NAQO** at three locations (site identity numbers 117, 118, and 145). Also, these locations were in excess of the NO_2 Annual Mean NAQO in 2021 and 2022. These are located along the road links, as identified by Defra's Pollution Climate Mapping (PCM) model for Portsmouth, just outside the existing AQMA 11:

- Alfred Road, south / west of AQMA11:
  - **117: Alfred Road, 42.79 µg/m³ (AR-Col 9).**
  - **118: Alfred Road, 43.72 µg/m³ (AR-Col12).**
- Hope Street south / west of AQMA11:
  - **145: Hope Street, 42.51 µg/m³ (HS-OppCol4).**

In addition, the NO_2 Annual Mean dropped below the annual average NAQO at two further two locations in 2023:

- Market Way south / west of AQMA11 on Market Way that is an extension of Alfred Road to the East:
  - **120: Market Way,** 35.73 µg/m³ **(MW-OppStABS):** The annual mean was **44.88 µg/m³** in 2022 to drop in 2023 to 35.73 µg/m³.
- **Kingston Road (KR-Col4):**

- **213: Kingston Road,** 38.53 µg/m^3 **(KR-Col4):** The 2022 NO_2 Annual Mean increased from 2021 to 2022 to reach 40 µg/m^3. This site is located in AQMA6**.** However, in 2023 the annual mean decreased to drop to 38.53 µg/m^3.

LAQ improved across the majority of NDDT monitored locations in the short and long-term cross the city:

a) In the short-term, NO_2 Annual Mean increased between 2022 and 2023 at 46 locations (20.18%) and, decreased at the remaining 182 locations (79.82%). Hence, **an improvement in LAQ in the short-term**.
b) In the long-term, NO_2 Annual Mean trend for the last 5 years (2019-2023) exhibited "Downward" trend at 191 locations (83.77%), and an "Upward" trend at the remaining 37 locations (16.23%). Hence, **an improvement in LAQ in the long-term**

In addition, LAQ improved within and in the vicinity of the 5 AQMAs in the short and long-term.

Even though the 2023 NO_2 Annual Mean levels were in excess of the NO_2 Annual Mean NAQO at three locations (117, 118, and 145) and in the absence of immediate relevant exposure as defined in the LAQM.TG, the annual means at these locations do not constitute exceedances of the NO_2 Annual Mean NAQO. Hence, no declaration of new AQMA is required.

2. NDDT NO_2 1-hour Mean.

None of CAQMS NO_2 Annual Mean exceeded 60µg/m^3 which indicates that an exceedance of the NO_2 1-hour Mean NAQO is highly unlikely.

3. Continuous NO_2 Annual Mean

The 2023 NO_2 Annual Mean level decreased across four out of six CAQMSs (66.67%) and still met the NO_2 Annual Mean NAQO at all long-term CAQMSs. These changes are considered as 'beneficial' with variable degrees. In the meantime, an overall long-term AQ improvement over the last 5 years (2019-2023) was still exhibited as a 'downward' trend across all six CAQMSs.

However, a breach of NO_2 Annual Mean NAQO was still registered at our newly established 5th PCC CAQMS at Alfred Road 37.70 µg/m^3.

4. The 2023 NO_2 continuous monitoring summary

- London Road (30.36 µg/m^3) **Beneficial** **Downward** **No Exceedance**
- AURN (15.01 µg/m^3) **Adverse** **Downward** **No Exceedance**
- Burrfields Road (23.53 µg/m^3) **Beneficial** **Downward** **No Exceedance**
- Mile End Road (25.14 µg/m^3) **Beneficial** **Downward** **No Exceedance**
- Anglesea Road (25.97 µg/m^3) **Adverse** **Downward** **No Exceedance**
- Alfred Road (37.70 µg/m^3) **Beneficial** **Downward** **No Exceedance**

5. Continuous NO_2 1-hour Mean

In 2023, no breach of the NO_2 1-hour Mean NAQO was registered at any of the CAQMS. In addition, none of CAQMS NO_2 Annual Mean exceeded 60µg/m^3 which indicates that an exceedance of the NO_2 1-hour Mean NAQO is highly unlikely.

6. PM_{10} Annual Mean

There has been no exceedance of the PM_{10} Annual Mean NAQO since 2019 at any of Portsmouth based CAQMSs. The highest registered PM_{10} Annual Mean since then was recorded in 2019 at PCC's Burrfields Road roadside CAQMS (19.49µg/m^3). In the long-term, PM_{10} Annual Means are in decline across all PCC and Defra's owned CAQMSs, except for the Burrfields Road where an 'upward' trend was exhibited. In the short-term, PM_{10} Annual Mean was in decline cross all Portsmouth based CAQMS, except for Burrfields and Mile End Road CAQMS where the PM_{10} Annual Mean increased by 0.28, and 1.07 µg/m^3 respectively.

7. The 2023 PM_{10} monitoring summary

- London Road (16.30 µg/m^3) **Beneficial** **Downward** **No Exceedance**
- AURN (14.55 µg/m^3) **Beneficial** **Downward** **No Exceedance**

- Burrfields Road (16.4 µg/m³) **Adverse** **Upward** **No Exceedance**
- Mile End Road (15.11 µg/m³) **Adverse** **Downward** **No Exceedance**
- Anglesea Road (18.72 µg/m³) **Beneficial** **Downward** **No Exceedance**
- Alfred Road (17.03 µg/m³) **Beneficial** **Downward** **No Exceedance**

8. PM_{10} 24-Hour Mean

The highest number of PM_{10} 24-hour Mean in excess of 50µg/m³ in the last 5 years (2019-2023) reached four occurrences in 2022 at Alfred Road CAQMS. This does not amount to an exceedance of the PM_{10} 24-hour Mean NAQO. The highest number of PM_{10} 24-hour Mean in excess of 50µg/m³ in 2023 was one occurrence at London Road CAQMS. This does not amount to an exceedance of the PM_{10} 24-hour Mean NAQO.

9. $PM_{2.5}$ Annual Mean

In 2023 $PM_{2.5}$ Annual Mean remains below the $PM_{2.5}$ Annual Mean NAQO at all CAQMSs with the highest Annual Mean level (9.89 µg/m³) being recorded at Burrfields Road CAQMS:

- In the short-term, the 2023 $PM_{2.5}$ Annual Mean:
  - decreased at London Road, Gatcombe Park (AURN) and Alfred Road CAQMSs resulting in short-term AQ improvement. Hence, the change is described as 'beneficial'.
  - increased at Burrfields Road and Mile End Road CAQMS resulting in short-term AQ deterioration. Hence, the change is described as 'adverse'.
- In the long-term the $PM_{2.5}$ Annual Mean exhibited a 'downward' trend cross London Road, Gatcombe Park AURN), Mile End Road and Alfred Road CAQMSs in the last 5 years (2019-2023) resulting in a long-term AQ improvement.

Historically, the highest $PM_{2.5}$ Annual Mean recorded in Portsmouth was 14.26µg/m³ back in 2014 at the AURN CAQMS. This level dropped in 2018 to 12.32µg/m³, decreased further in 2019 to 8.9µg/m³ and then started to increase since to reach 8.49µg/m³ in 2023.

10. The 2023 $PM_{2.5}$ monitoring summary

The 2023 $PM_{2.5}$ monitoring concluded:

- London Road (9.40 µg/m³) **Beneficial** **Downward** **No Exceedance**
- AURN (8.49 µg/m³) **Beneficial** **Downward** **No Exceedance**

- Burrfields Road (9.89 µg/m^3) **Adverse** **Upward** **No Exceedance**
- Mile End Road (9.15 µg/m^3) **Adverse** **Downward** **No Exceedance**
- Alfred Road (9.14 µg/m^3) **Beneficial** **Downward** **No Exceedance**

It is not always possible to categorically state why the NO_2, $PM_{2.5}$ and PM_{10} levels changed in several areas across the city in 2023 when compared with previous years, given that a multitude of factors influence pollutant generation and their subsequent dispersion. Such influences are wide ranging and complex but are highly likely to include the impact of COVID-19 as referenced earlier within this ASR.

LAQ Monitoring Priorities

Portsmouth remains under ministerial direction to reach the legal limit in the shortest possible time as result of extensive modelling that has been undertaken by Defra to identify areas where LAQ is not expected to meet legal limits in 2023. This modelling is based on extensive roadside AQ monitoring and traffic surveys. Two local road sections in central Portsmouth were identified where modelled NO_2 concentrations were forecast to exceed the statutory limit of 40 µg/m3 (or 40.49 µg/m3 unrounded) in 2022. These are:

- A3 Alfred Road (Unicorn Rd to Queen St, 41.7 µg/m3)
- A3 Commercial Road (south of Church St, 41.1 µg/m3)

These road links are located in the city centre area, on the main A3 route in and out of the city. For context, 2022 was the earliest year in which compliance was considered feasible as a result of implementing a charging CAZ and represents the benchmark for assessing options. In the absence of any intervention, compliance would be achieved in 2023 at the identified exceedance locations, due to assumed background changes in fleet composition. However, the COVID-19 pandemic has created some uncertainty around the background rate at which vehicles are renewed, due to a decline in the number of new vehicle registrations in the first six months of 2020. This could extend the baseline year of compliance. **The information contained with this 2023 report clearly identifies areas where exceedance remains despite the above predictions.**

There are 5 AQMAs currently in place within Portsmouth's statutory boundary, due to exceedance in NO_2 Annual Mean NAQO. The annual reporting at these 5 AQMAs has shown that in most locations there has been a slow downward trend in NO_2 since their

designation, as a result of actions undertaken by PCC and a renewing of vehicles to cleaner models, and personal choices made by residents to travel in more sustainable ways. **Despite the improvement AQ is still poor in some parts of the city but not to the extent of exceeding the NO_2 Annual Mean NAQO.**

Because of the danger to human health that poor AQ poses, PCC is legally obliged to bring NO_2 Annual Mean down to within legal limits in the shortest possible time. This meant that PCC had to take stringent actions, such as introducing the CAZ and its complimentary measures. These may, in due course, bring PCC into compliance with NO_2 Annual Mean NAQO, but it is recognised that there is still further to go to improve LAQ for its residents' health and wellbeing. That is why additional measures have been pursued and implemented, with further actions being planned as PCC explore other ways in which Portsmouth's AQ can be improved.

Examples to improve air quality include:

We're excited about our bold plans to tackle emissions and carbon, and we're turning the PIP into a living laboratory of new technology to help achieve our ambitions. As we are owned by the people of Portsmouth, it's important we do what we can for our city. Our plans will ultimately help us to become one of the UK's first zero emission ports by 2050 and reach carbon net-neutral by 2030. These goals, which aim to improve AQ and our carbon footprint, have been put together with PCC's climate change strategy and the government's Maritime 2050 plan in mind. We've also pledged our commitment to environmental sustainability by signing the Portsmouth Green Partnership Charter.

We have 5 road sections on the A27/M27 Strategic Road Network (operated by National Highways (NH)) where NO_2 Annual Mean remains close to exceeding the statutory NO_2 Annual Mean NAQO in 2022. The highest exceedance is on the section of the A27 immediately north of Portsea Island. These locations are NH responsibility; however, we are working with them to ensure the AQ data they need is provided by us. PCC is expected to ensure local measures do not adversely impact on these sites. The introduction of the CAZ in the south-west of the city is not expected to adversely impact these sites.

Local Engagement and How to get Involved.

As private vehicles contribute to poor AQ in the city, one of the most effective ways for the public to get involved with improving AQ in Portsmouth is to choose active and

sustainable travel where possible. More information on this can be found at the 'My Journey' website which gives information on public transport, walking, cycling and other opportunities.

For specific AQ enquiries please contact: CleanerAir@portsmouth.gov.uk

You can also visit the below sites which provide additional information in respect to AQ related information:

Portsmouth Travel Planners Network (via My Journey): Home | My Journey Portsmouth

Clean Air Portsmouth: Home - Cleaner Air Portsmouth

Clean Air Zone: Clean Air Zone - Penalty Charge Notices - Portsmouth City Council

Local Responsibilities and Commitment

This ASR was prepared by Regulatory Services of Portsmouth City Council with the support and agreement of the following officers and departments:

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This ASR has been approved by:

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- The Group Leader of the City Council - Councillor Steve Pitt
- The Deputy Group Leader of the City Council - Councillor Suzy Horton
- Cabinet Member of Climate Change and Greening the City - Councillor Kimberly Barrett
- Cabinet Member for Transport - Councillor Peter Candlish

- Community Wellbeing, Health & Care - Councilor Matthew Winnington

If you have any comments on this ASR, please send them to Redouan Sadak at:

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Table of Contents

Figures

Tables

1 Local Air Quality Management

This report provides an overview of Local Air Quality (LAQ) in the City of Portsmouth during 2023. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

The Local Air Quality Management (LAQM) process places an obligation on all local authorities to regularly review and assess LAQ in their areas, and to determine whether or not the National Air Quality Objectives (NAQOs) are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the NAQO(s). This Annual Status Report (ASR) is a statutory annual requirement showing the strategies employed by Portsmouth City Council (PCC) to improve LAQ and any progress that has been made. The NAQOs applicable to LAQM in England are presented in Table E.1.

PCC rely on a significant network of diffusion tubes and a limited number of continuous monitoring sites for AQ data to assess the performance of the Clean Air Zone (CAZ) and its impact upon the city as a whole. The diffusion tubes themselves are analysed and verified yearly, meaning that data for 2023 has not been verified and unavailable until now. Whilst immensely useful in providing additional information in respect to hourly, daily, and weekly trends, the six continuous monitoring sites on their own cannot give a true picture of AQ in Portsmouth as they only provide a snapshot of AQ in a particular location and not in the city as a whole.

2 Actions to Improve Air Quality

The monitoring of two locations, on Alfred Road and Hope Street, demonstrate that the NO_2 Annual Mean continues to be in excess of the NO_2 Annual Mean NAQO in 2023. Both are on the A3 route in and out of the city.

In previous years in order to identify the most suitable options for bringing down levels of NO_2 Annual Mean to within legal limits, a longlist of 64 different interventions was considered. These included both non-charging (such as anti-idling campaigns, changes to traffic signals etc) and charging interventions (i.e., different levels and types of vehicle charging). These options were assessed and refined using a series of assessment criteria.

The primary assessment criteria were:

- delivery timescales, where the charging CAZ benchmark was assumed to be 12-18 months.
- potential scale of NO_2 reduction, based on emissions modelling undertaken as part of the 2018 Targeted Feasibility Studies or proxy estimates based on the potential change in vehicle flow, speeds and/or delay.
- certainty of delivering the estimated change identified above, e.g., high certainty for options which ban traffic or reduce per vehicle emissions and low certainty for options which rely on individuals choosing to change their behaviour (e.g., travel planning initiatives); and
- risk of displacement of traffic or AQ limit exceedance to other AQMAs.

The four sub-criteria which were assessed were the strategic case for the intervention, supply side capacity and capability, affordability, and achievability.

Portsmouth Clean Air Zone

Delivery of a Charging CAZ began in November 2021, as this was Central Government's preferred tool for bringing down emissions to within legal limits in the shortest possible time - any alternative suggestion would have needed to achieve the same reduction in emissions in a similar time frame. Therefore, any options which would

take more than 24 months were assumed to have failed in the objective to reduce emissions to within legal limits in the shortest possible time.

After extensive studies and numerical modelling, looking at both charging and non-charging options, it was identified that a Class B+ CAZ was needed to bring levels of pollutants down to within legal limits in the shortest possible time. There was no non-charging measure which on their own, or in combination with other interventions, could sufficiently reduce emissions to within legal limits in the shortest possible time, as Portsmouth had legally been mandated to do by Central Government.

The final option, which Central Government instructed PCC to implement, was a Class B+ CAZ. A Class B CAZ is one which charges non-compliant heavy goods vehicles, buses, coaches, taxis, and private hire vehicles.

In order to reach compliance with legal limits PCC also delivered a number of non-charging measures alongside the Class B CAZ (the + element) such as changes to traffic signals and revising Portsmouth's taxi and private hire licensing policy. The modelling forecast is that this option would be effective at reducing emissions to within legal limits in the shortest possible time. There was therefore no legal need at the time to introduce a CAZ C or D which could charge vans and cars.

Government advice is that the CAZ will need to be in place until compliance with legal limits have been met and have been proved to be permanent. Portsmouth will need to have been compliant with legal limits for at least two years and provide demonstrable evidence in the success of the measures to improve AQ, such that the removal of the CAZ will not lead to a reversal of these.

Once evidence shows that LAs have been successful in reducing and maintaining NO_2 levels below the legal limit and that, where applicable, *these levels are likely to be sustained without measures*, government intends to confirm that the legal obligation on the LA to maintain the measures has been met. Whether a LA wishes to continue with their measures will be a decision for them to make. Removing measures can proceed, providing it can be shown that this will not risk compliance.

As part of the Exiting the NO_2 Programme process, JAQU conducts a series of State Assessments of LA monitoring and evaluation data. Portsmouth received its State 1

Assessment in November 2023. The purpose of the State 1 report is to inform the LA and JAQU, whether the data indicates that the LA is on track to achieve success by the end of the calendar year. **Success is defined as no exceedances observed at valid locations in the LA**.

To be successful in achieving State 1, local authorities are to show no exceedances observed at valid locations in the Local Authority (LA) area, and as Portsmouth is still showing exceedances in 3 locations, we are not on track to achieve success and therefore will not progress to State 2. The CAZ will not move into decommissioning in November 2024 [as originally anticipated]; we estimate it likely that the CAZ will be operational until November 2026 as a minimum.

Portsmouth City Council (PCC) undertook a Triage Process with the Joint Air Quality Unit (JAQU) in December 2023 to ascertain why air quality plans have not succeeded in sufficiently reducing NO2 legal limits. This outlined that the period since the original modelling work was undertaken in 2019 has seen significant socioeconomic changes, driven by a global pandemic, international conflict and a cost of living crisis; all of which may have challenged the original assumptions on fleet renewal and wider behavioural change.

A number of strategic transport schemes have also started to deliver, and PCC have successfully bid for external funding to deliver further transformational changes to our transport network. These, alongside significant city centre regeneration and development proposals, warrants further review in the context of air quality.

The Joint Air Quality Unit have written formally to us to instruct us to undertake a further Targeted Feasibility Study. This commenced in February 2024 and seeks to understand the problem, demonstrate the case for change and identify further interventions to reach compliance in the shortest possible time. This is due to complete in autumn 2024.

In April 2024 Defra published the additional following information in respect to the performance of the CAZ - Portsmouth (15 March 2021 to 15 March 2022)[6].

- Total number of individual payments = 2,866.
- Total number of individual journeys paid for = 4,405.
- Total number of business account payments = 239.
- Total number of business journeys paid for = 457.
- Approx. number of vehicles travelling through the CAZ (up to March 2024) = 300,000.
- Approx. % of non-compliant vehicles driving within the CAZ = 0.10%.
- Portsmouth vehicle types driving through the CAZ = Car 84%, Taxi 2.53%, Van 1.66%, HGV 0.75%.
- Portsmouth non-compliant vehicle types driving within the CAZ - Taxi 69%, Bus 5.45%, HGV 25.55%.

All of the above information is being carefully considered and additional actions, plans and strategies are being implemented to ensure that PCC can move into a State 2 assessment process.

Bus Transformation Measures in Portsmouth

The Portsmouth Bus Service Improvement Plan (BSIP) is Portsmouth's visionary delivery scheme aligned with the government's National Bus Strategy and aims to dramatically improve bus services in Portsmouth and to encourage passengers back to the bus. This programme is managed by an enhanced partnership between local bus companies Stagecoach South, First Solent, and PCC.

With a £48 million grant from the Department for Transport the Portsmouth BSIP aims to increase bus usage in Portsmouth by engaging with the local community, and transforming the bus network in the city, so that it is faster, more reliable, and more affordable.

A consultation with residents as part of the Portsmouth Travel Publication Survey took place in 2023, which stated that buses are the most frequently used mode of public

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[6] Clean Air Zone Service Annual Report 15 March 2021 to 15 March 2022 (publishing.service.gov.uk)

transport in the city, and residents wanted more reliable, frequent, affordable, and direct bus services.

Transformations to bus services in Portsmouth over the last year include the introduction of tap on, tap off technology and on-board bus information screens which provide next stop announcements. Enhancements to the city's bus network has delivered increased frequency and longer operating hours on a number of routes including some which now operate on a 24 / 7 basis and services on Christmas Day. This helps to unlock the nighttime economy as well as give sustainable travel options to people who work early in the morning or late at night. Bus services also ran on Christmas day so families could stay connected over the festive period. These service enhancements are accompanied by new ticket ranges providing 3 new multi operator tickets, that can be used on any of Portsmouth's buses and tickets delivering cheaper fares for under 19's and job seekers.

Free fare weekends across Catch the Bus Month (September) gave people travelling in the city a chance to try the bus and demonstrate it as a genuine alternative to car use to many more people. We took at least 70,000 car journeys off the road in September 2023, Free fare events also supported Small Business Saturday and National Clean Air Day.

Real time information displays are due to be installed at 286 further stops in the city, providing almost total coverage. A comprehensive programme of bus stop improvements works is in development aimed at bringing improved punctuality for buses and an improved experience for passengers by improving comfort, security and accessibility at bus stops in Portsmouth. Traffic signal priority schemes and bus lane schemes will also reduce bus journey times.

The South East Hampshire Rapid Transit Programme Tranche 2 began in September 2020 with the funding award of £55.6m from DfTs Transforming Cities Fund (TCF) to Hampshire County Council, Portsmouth City Council, Havant, Fareham and Gosport Borough Council's and Isle of Wight Council. In addition, there was a local authority contribution of £7.9m and match funding of £37.7m. The total programme funding is £101.2m. The SEHRT website provides details of the vision of SEHRT and the schemes: www.sehrt.org.uk . PCC received £25.2m for investment into 9 schemes. All the schemes were in delivery during 2023 and will be delivered by the summer of 2024. The delivery of the programme will improve transport links between Portsmouth, Gosport,

Fareham, Waterlooville, Havant and Ryde on the Isle of Wight. In Portsmouth, three active travel schemes have been delivered providing real benefits to encourage walking and cycling. The city centre has been redesigned to improve bus journeys in Portsmouth. The roundabout schemes will ensure bus priorities and reduced journey times.

The proposals are also an important part of Portsmouth's Transport Strategy. Supporting the Transport Strategy is the emerging Local Cycling and Walking Infrastructure Plan. This is an ambitious delivery plan that proposes significant investment over the next 10 years that looks to transform the city for both walking and cycling. The funding will support 23 schemes across Hampshire to improve walking and cycling routes and is an important next step for the development of a rapid bus transit network for the area.

Workplace Sustainable Travel Fund

The aim of the Workplace Sustainable Travel Fund is to reduce single occupancy car journeys and encourage cycling and walking for both business journeys and travel to and from work. These behaviours translate into helping to improve the AQ in Portsmouth. Over three rounds of funding, the project has helped over forty Portsmouth based businesses and organisations to adopt sustainable travel measures.

Until early 2024 businesses and organisations in Portsmouth were invited to apply for round three of the Fund - up to £4,000 to boost sustainable travel to help reduce environmental footprints and contribute to a greener city with cleaner air. This included:

- Financial support: receiving up to £4,000 to support sustainable travel for business journeys and make it easier for employees to walk or cycle to work.
- Active travel options: embracing cost-effective options like e-bikes, cargo bikes, or pool bikes.
- Environmental responsibility: reducing organisations environmental footprint, showing commitment to slowing climate change, and pave the way for a net zero future.
- Employee wellbeing: promoting employees' health and wellbeing with increased walking and cycling.

School Streets

School Streets were introduced to Portsmouth during 2021 as short trials. They open up roads to walking and cycling by temporarily limiting most motorised traffic around schools as this creates safer routes to school and allows the local community to enjoy a safer place to live, study, work, and travel.

School Streets limit the amount of non-essential traffic from entering the roads near schools during drop-off and pick-up. Parents, children, school staff and visitors are encouraged to walk or cycle to school, resulting in a safer, healthier environment which develops cleaner air and reduces traffic congestion and noise in residential areas.

During a School Street, access is available for residents and business premises on the street, emergency services, school transport, blue badge holders, taxis and carers of residents who live in the street.

PCC are working with walking and cycling charity, Sustrans, to manage the scheme. Online and in-person information sessions are held at participating schools ahead of the launch to give residents, parents, and pupils a chance to find out more. People can share their experience through a survey which can be found on the Council website. We are working with Bramble and St Jude’s Schools to permanently reduce traffic around these schools during term time.

The Sea Change Project

The Sea Change project will design, build, and operate a 'shore power' system across the three busiest berths at PIP. This will allow visiting ferry or cruise ships to turn off their engines when in the port, as they will be able to 'plug-in' and use green electricity to run their onboard systems.

Sea Change has the potential to revolutionise the UK’s maritime sector, and further establishes PIP's reputation as a living laboratory of green technology with industry-leading sustainability credentials. This project realises the full potential of two new liquefied natural gas (LNG) electric hybrid ships from Brittany Ferries, which will begin sailing from Portsmouth starting in spring 2025 and will be shore-power ready.

Providing shore power will reduce harmful emissions and improve AQ around the PIP. It is estimated that the system will save over 20,000 tonnes of CO2e per annum from 2027. This is the equivalent to the annual carbon footprint of around 2,500 UK households or making 11,111 round trips by plane from London to New York. This ambitious project reaffirms the PIP's commitment to play their part in a sustainable future for the city after signing the Portsmouth Green Partnership Charter in November 2022 and reduce their impact on the local community.

Brittany Ferries is introducing two new LNG-electric hybrid ferries from 2025, which run on a combination of cleaner LNG and battery power. With shore power available at the port, they will be able to charge their batteries and run on battery power when manoeuvring through Portsmouth harbour, improving AQ, and supporting the industry-wide shift to zero-emission shipping.

Additional Measures

Further to those measures identified in the LAQP and noted above a number of measures have been implemented in recent years, are currently being implemented, or are expected to be implemented soon. These have the potential to make a positive contribution to improving AQ in Portsmouth. These are summarised within the paragraphs below:

Portsmouth's fleet of refuse collection vehicles are now run-on Hydro-treated Vegetable Oil (HVO), rather than diesel. HVO fuels are made using used second-hand oils and fats from cooking and other industries. Emissions data indicates that HVO fuel results in the following fuel efficiencies:

- Carbon Dioxide (equivalent) - reduction of up to 90%.
- Nitrogen Oxide - reduction of up to 30%.
- Particulates - reduction of up to 85%.

By using HVO fuels for refuse collection vehicles this reduces the impact that statutory services such as refuse collections have on the city's AQ. Whilst the switch from regular fuel to the HVO fuel is not sufficient to bring the refuse collection vehicles in line with Euro 6 standards - particularly with regards to NOx, it still offers a smart, effective

reduction at very little cost to the taxpayer. Because refuse collection vehicles will be operating across the city, and not just within the CAZ, these emissions savings will benefit everyone. It also means that the council can invest in new Euro 6 refuse collection vehicles as the current contract ended in March 2024. Moreover, the significant reduction in CO2(e) means that the use of HVO fuel has wider ranging benefits to the environment, beyond improvements to AQ. The benefits of HVO is such that one engine running on diesel produces as much CO2(e) as 10 running on HVO, therefore helping Portsmouth tackle the climate emergency through simple steps in the way in which the PCC operates.

In partnership with First Solent and Hampshire County Council, PCC has been awarded £12.7 million as part of a £27.58m investment to replace 62 diesel buses with new electric buses. These operate on the following principal routes:

- 1 Gunwharf - Southsea
- 9/9A Fareham - Gosport
- Fareham - Southsea
- X4 The Hard - Fareham - Southampton
- X5 Gosport - Fareham - Southampton
- The Eclipse rapid transit bus from Fareham - Gosport for the ferry connection to Portsmouth

The buses are forecast to be able to operate for up to 300 miles between charges. The buses will run through areas where a quarter of households are without a car, providing much needed clean connectivity. Furthermore, as electric vehicles are much less polluting than diesel vehicles, with zero tailpipe exhausts, this will support LAQ improvements on the bus routes that travel through four of Portsmouth’s air pollution hotspots.

PCC is making travel greener by introducing electric vehicle charging points on-street and in our car parks. Whether residents have chosen an electric vehicle for its low running costs or because they want to help improve AQ in the city, PCC want to help residents to charge their vehicles near to their home. This supports our commitment towards creating cleaner air for our city and improving health for everyone who lives, works, visits and studies here.

Since 2019 we have installed a network of nearly 100 charge points, thanks to funding from the Office for Zero Emission Vehicles (ZEV). Our award-winning system uses

a charging point housed inside a streetlamp column or slimline bollard, enabling residents to safely charge their vehicle close to home, on a pay-as-you-go basis and allows the public access to charging points at public car parks such as Portsmouth Park and Ride, Stubbington Avenue Car Park, London Road Car Park, and the Portsmouth International Port. Portsmouth was one of the first local authorities in the UK to develop this approach to on-street charging, which has been introduced over two phases. We have been successful in securing £3.682m of funding and will bring forward delivery plans through our Electric Vehicle Infrastructure (EVI) Strategy, which provides an ambitious approach to enable and promote the uptake of electric vehicles in the city. This will support the promotion of cleaner air and city decarbonisation.

The council will be looking to meet current residential demand for on-street charging with this funding, and then take a more strategic approach in the rollout of future phases of on-street charging to meet the forecasted demand for EVs in Portsmouth.

Our EVI strategy will set out holistically how to maximise the potential for off-street charging in residential areas to meet resident needs, and in key destinations around the city for workers and visitor needs. Through supporting key policies nationally, regionally, and locally, our EVI strategy will also support key council projects around the city, such as the Clean Air Zone and the future development of car clubs.

PCC has set an ambitious target to achieve net-zero carbon emissions by 2030, with a climate emergency declared by the council in March 2019 and the EV strategy will help facilitate meeting this target.

The Portsmouth Transport Strategy 2021 – 2038 (Local Transport Plan 4 (LTP4) - Portsmouth City Council) sets out our vision of a greener, safer and healthier future for everyone who travels into and around the city. Our policies and objectives will support economic growth, reduce the damaging impact on AQ caused by transport, explore the use of new advances in technology and transport and better connect Portsmouth with the wider region, whilst helping people to have safer, greener, and cleaner journeys. This Implementation Plan supports the delivery of the strategy and enables us to think ahead, capitalise on opportunities and shape our city for generations to come whilst delivering cleaner air, prioritising walking, and cycling, transforming public transport whilst supporting businesses and protecting our assets.

For most, the health benefits of walking and cycling far outweigh the risks of roadside exposure to air pollution. Aside from the health benefits of the additional exercise, it has the potential to reduce exposure to air pollution. This is because AQ inside a vehicle can be worse than it is outside.

24% of all journeys in Portsmouth to work are less than 1.2 miles, so there is significant potential for people to walk and cycle. If people walked and cycled more and drove less, there would be less traffic congestion, cleaner air for us to breathe and people would become fitter.

Cycling is an important part of PCC's Local Transport Plan, and in line with the government's Cycling and Walking Investment Strategy, our safer travel team have created the Local Walking Cycling and Infrastructure Plan.

According to Transport for the South East, the number of people travelling actively is fairly low. This appears to be due to a lack of high-quality infrastructure and not enough promotion of active travel, so people don't see it as a safe or realistic way to get around.

We want to make walking and cycling a priority, so we're creating a network of attractive, inclusive, safe, and accessible routes which are joined up and continuous. Each route has been reviewed for its attractiveness, comfort, directness, and safety.

Drivers in Portsmouth have consistently been asked to switch their car engines off when they are stationary and it is safe to do so, to improve people's health by lowering air pollution. A new campaign 'When you stop, engine stops' was launched at the end of 2021, running into 2022 and was focused on how a single minute of a car's engine idling releases 150 balloons worth of harmful emissions into the air and aims to evoke thoughts on how small changes to everyday habits can create big changes (When you stop, engine stops – new anti-engine idling campaign launches - Cleaner Air Portsmouth). Portsmouth City Council is asking residents to consider the next generation, and that if public transport is not an option, to drive responsibly and not idle. This builds upon the successful *"Cough Cough, Engine Off"'* branding that is well established across the city.

The council launched the awareness campaign just over a year after the Clean Air Zone was introduced in a bid from government to lower air pollution rates in the city. Moving into 2024 we started to build on this campaign and the successful 'Cough Cough Engine Off' campaign by working in collaboration with NHS partners and Public Health to

develop a series of air quality marketing initiatives. The first - a hard-hitting marketing campaign which utilises imagery similar to that on cigarette packs (Campaign launched to help cut air pollution and boost health across Portsmouth - Cleaner Air Portsmouth) - rolled out in Spring 2024, and will be followed later in the year with a 'local heroes' campaign.

Residents can also report incidents of engine idling using an online tool at cleanerairportsmouth.co.uk/engineidling, to help support the council in identifying key target areas where engines are kept running.

2.1 Key Challenges and Future Progression

Portsmouth is a bustling south coast city with unique geography, being surrounded by 49km of coastline on three sides. Its historic, diverse, and vibrant waterfront contains the HM Naval Base, Portsmouth International Port, and major tourist attractions (such as Southsea seafront, Gunwharf Quays retail outlet, and the world-renowned Portsmouth Historic Dockyard / Mary Rose Museum). In addition, the University of Portsmouth in the city centre has a population of c. 20,000 students and has ambitious plans for growth.

Portsmouth is one of the most densely populated cities in Europe (with a population density higher than some parts of London), and its population of around 217,000 is expected to grow to 236,000 by 2040.

These factors create unique challenges for Portsmouth in terms of improving its AQ. It is well documented that road traffic is a significant contributor to air pollution and in July 2017 the UK government (Defra and the Department for Transport) published the UK plan for tackling roadside NO_2 concentrations[7], setting out its commitment to achieving a cleaner and healthier environment, with the aim of benefitting both people and the economy.

Air pollution is the largest environmental risk to public health in the UK and it is known to have disproportionate effects on vulnerable groups. AQ disproportionately affects the

[7] Air quality plan for nitrogen dioxide (NO2) in UK (2017)

very old, the very young, and those with chronic conditions. It also has greater impact on those who live, work, or go to school in more deprived areas.

With such clear evidence about the impact of air pollution on people's health, PCC has been clear about its plans to improve AQ in the city, as set out in the Air Quality Strategy 2017-2027[8]. This strategy sets out a commitment to 'work collaboratively to improve and maintain a healthy LAQ in the city in order to protect health and the environment, enhancing our status as a great waterfront city'.

Our strategic objectives are underpinned by the following core principles: evidenced-based practice, innovation, collaborative working, monitoring and evaluation, ambition, seeking funding, and analysis.

The strategic aims of the strategy and core principles have been applied in the development of Portsmouth's LAQ Plan (LAQP) produced in response to ministerial directions requiring PCC to make improvements to concentrations of NO_2 in the city in the 'shortest possible time'.

Having received ministerial approval on the LAQP from 1st March 2021, PCC was from that date, and remains, fully committed to delivering compliance against legal limits for NO_2 in the shortest possible time. PCC however wishes to do more and is therefore reviewing our AQ strategy with a group of officers and interested parties who are contributing to a new emerging narrative. Whilst still in draft this this builds upon previous knowledge. Our new strategy vision is likely to include:

- Clean air for our city complying with WHO global AQ guidelines by 2030.
- Reduce sources of pollution (Protect).
- Limit exposure to pollution (Mitigate).
- Focus on the most vulnerable (elderly, youngest, sickest) (Avoid).
- Provide timelines.
- Prioritise action according to need.

[8] PCC Air Quality Strategy PDF

2.2 Engagement Activity

Decision makers both locally and nationally continue to be engaged in the work to improve AQ across the city. Cabinet Members for Transport and Climate Change and Greening the City, engage with the Air Quality and Active Travel Board, and regular briefings are held for all Councillors to update on the work across the authority in respect to measures to improve AQ.

PCC are continuing to engage with a diverse range of external stakeholders on the issue of air pollution and the steps being taken to reduce it. In order to facilitate our activities, our engagement officers continue to connect with businesses, the public and interested parties following the implementation of the charging CAZ and to support them in taking steps to reduce their own emissions, as well as signposting them towards funding to help them do this as it becomes available. The work of the engagement officers complements our existing commitments to engage in AQ related projects and other activities involved or connected to reducing levels of pollution within the city.

Building on the public consultation which took place in summer 2020, reaching 93,000 households in the city as well as local businesses, a business advisory group has been setup to engage local businesses with continual CAZ updates. The group acts to ensure businesses who may be impacted by the CAZ are kept updated with progression on elements such as vehicle exemptions, and funding opportunities, and continues to explore new opportunities as how best to engage with communities in respect to AQ messaging and reducing pollutant levels.

Travel in Portsmouth is a major contributor to air pollution and the type of transport chosen can help to improve AQ. PCC is making transport improvements to the city including safer cycling routes and facilities to make it easier to choose this way of travelling, improving public transport connectivity with the wider region, funding the upgrade of some of the most polluting vehicles on our roads, and providing electric charging points for residents choosing greener vehicles. PCC are improving the options for travel and together we can choose a greener, cleaner way of travelling for cleaner air in Portsmouth.

Despite the work that has and continues to be undertaken, Portsmouth still faces challenges to reduce the concentrations of harmful pollutants in the air. The CAZ was one of the key challenges of addressing air pollution and its performance is just beginning to

be known. It is therefore more important than ever to accept that our own actions are part of the problem and therefore changing behaviours is part of the solution as we all have a part to play in improving the AQ in the city.

2.3 Air Quality Management Areas

AQMAs are declared when there is an exceedance or likely exceedance of a NAQO. After declaration, the authority should prepare an Air Quality Action Plan (AQAP) within 18 months. The AQAP should specify how air quality targets will be achieved and maintained and provide dates by which measures will be carried out.

A summary of AQMAs declared by PCC can be found in Table 2.1. The table presents a description of the 5 AQMAs that are currently designated within Portsmouth. Map 1, in **"Appendix D: Map (s) of Monitoring Locations and AQMAs"** provides maps of AQMA(s) and also the LAQ monitoring locations in relation to the AQMA(s). The NAQO pertinent to the current AQMA designation is NO_2 Annual Mean

The 5 AQMAs currently in place within Portsmouth statutory boundary which were declared due to exceedances of the NO_2 Annual Mean NAQO are:

- AQMA6: Extends north along Fratton Road from Fratton Bridge to Kingston Road, continuing into London Road until the roundabout junction with Stubbington Avenue and Gladys Avenue.
- AQMA7: Covers Hampshire Terrace and the St Michael's Road gyratory.
- AQMA9: Covers the southernmost section of Eastern Road from Sword Sands Road south into Velder Avenue and its junction with Milton Road.
- AQMA11: Extends from Rudmore Roundabout south to Commercial Road roundabout.
- AQMA12: Covers the greater part of Queen Street from The Hard to St James's Street.

Further information relating to declared or revoked AQMAs, including maps of AQMAs boundaries are available online here.

Additionally, because of Defra's focus on additional areas of the city through the PCM model, the following 2 road links in Portsmouth were modelled to exceed the NO_2 Annual Mean NAQO:

- A3, Alfred Road between Hope Street roundabout and the Queen Street / Anglesea Road / Alfred Road intersection.
- A3, Mile End Road between the southern end of the M275 and Church Street roundabout (located within AQMA 11).

Table 2.31 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by National Highways?	Level of Exceedance: Declaration	Level of Exceedance: From 2022 to 2023 (Current Year)	Name and Date of AQAP Publication	Web Link to AQAP
AQMA 6	2005	NO_2 Annual Mean	An area encompassing a large number of residential properties extending north along Fratton Road; from Fratton Bridge into Kingston Road, continuing into London Road until the roundabout junction with Stubbington Road and Gladys Avenue	NO	59.9 µg/m^3	At "The Tap" From to 35.69 µg/m^3 to 33.61µg/m^3	PCC's AQAP was set up as a citywide AQAP rather than specifying actions for individual AQMAs.	AQAP
AQMA 7	2005	NO_2 Annual Mean	An area encompassing a number of residential properties along Hampshire Terrace and St Michaels Road gyratory	NO	43.36 µg/m^3	At Lord Montgomery Way From to 33.46 µg/m^3 to 31.19µg/m^3	PCC's AQAP was set up as a citywide AQAP rather than specifying actions for individual AQMAs.	AQAP
AQMA 9	2005	NO_2 Annual Mean	An area encompassing a number of residential properties near to the southernmost section of Eastern Road from Sword Sands Road south into Velder Avenue and its junction with Milton Road	NO	43.1 µg/m^3	7 Velder Avenue From 29.92 µg/m^3 to 27.92µg/m^3	PCC's AQAP was set up as a citywide AQAP rather than specifying actions for individual AQMAs.	AQAP
AQMA 11	2010	NO_2 Annual Mean	This area encompasses a large number of residential properties east of the west transport corridor extending along part of the M275 and Mile End Road stretching from Rudmore roundabout south to Church Street roundabout	NO	46.25 µg/m^3	Mile End Road, "Market Tavern" PH From to 31.39µg/m^3 to 29.95µg/m^3	PCC's AQAP was set up as a citywide AQAP rather than specifying actions for individual AQMAs.	AQAP

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by National Highways?	Level of Exceedance: Declaration	Level of Exceedance: From 2022 to 2023 (Current Year)	Name and Date of AQAP Publication	Web Link to AQAP
AQMA 12	2005	NO_2 Annual Mean	An area encompassing a number of residential properties along Queen Street mainly an area stretching from The Hard to St James's Road	NO	33.11 $\mu g/m^3$	Queen Street, Column 30 From to 26.94$\mu g/m^3$ to 25.90$\mu g/m^3$	PCC's AQAP was set up as a citywide AQAP rather than specifying actions for individual AQMAs.	AQAP

☒ **Portsmouth City Council confirms the information on UK-Air regarding their AQMA(s) is up to date.**

☒ **Portsmouth City Council confirms that all current AQAPs have been submitted to Defra.**

2.4 Progress and Impact of Measures to address Air Quality in Portsmouth

Defra's appraisal of our 2023 ASR concluded that PCC needed to make additional efforts to achieve compliance with the prescriptive requirements of the ASR template. PCC has made additional efforts to comply with such within this 2024 ASR. PCC have always however taken a view to provide additional value in respect to our information and we will continue to do so. Defra's appraisal of the 2023 ASR can be found in Section 3.1.

PCC has taken forward a number of direct measures during the reporting year of 2023 in pursuit of improving LAQ. Details of measures completed, in progress or planned are set out in Table 2.4.

More detail on these measures can be found in our respective Action Plan 2019 and its relevant Appendices, the Portsmouth Clean Air Zone Consultation report 2019 and Portsmouth Clean Air Zone Consultation 2020. Additionally, Portsmouth has published a number of technical reports relating to AQ impact assessments and AQ modelling and are continuing to review its policies which are relevant to AQ.

We are continuing to work closely with Government's Joint Air Quality Unit (JAQU) to ensure that levels of NO_2 in the city are reduced below legal limits in the shortest possible time. The process that we have to follow has been set out by JAQU and there are a number of documents and data sets that we are required to submit to Government for review on a regular basis - a requirement with which PCC intends to continue to achieve in full.

The problems that PCC are facing are however complex. Portsmouth is a densely populated partial island city with 3 primary north south main road links. NO_2 pollution from road traffic is the most significant problem in Portsmouth particularly where high volumes or congested traffic travels through street canyons. Therefore, combinations of the measures contained within Table 2.4are required to contribute towards compliance.

Whilst the measures stated above and in Table 2.4 will help to contribute towards compliance, PCC anticipates that further additional measures not yet prescribed may be required in subsequent years to deliver our aim of reducing air pollution beyond those formally prescribed.

PCC has worked to implement pollution reduction measures in partnership with the following stakeholders to reduce levels of NO_2, working partnership with road users, focus groups such as taxi drivers (hackney carriage drivers, private hire vehicle drivers, and taxi companies), local businesses (including city centre retailers, manufacturing businesses, hauliers, Wightlink, Portsmouth International Port and the Naval Base), regional partners, other Local Authorities and government agencies such as JAQU and the National Highways Authority.

Table 2.4 – Progress on Measures to Improve Air Quality - Rated (red least effective / green most effective)

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	
APV 1	Car Clubs	Alternatives to Private Vehicle Use	Car Clubs	2020	2023	PCC & Enterprise Car Club	PCC (for set up/staff costs. Enterprise Car Club will be running the Car Club and the costs associated with this.	No	Funded	£100k - £500k	Implementation	<0.1µgm3 Car Club sharing has the potential to reduce the cars per person on the road and therefore reduce emissions.	Use of Car Club	The car club launched in September 2023 in partnership with Enterprise. The first phase of the scheme saw the introduction of eight on-street car club bays, each with their own car club vehicle, located across the wards of Central Southsea, Eastney and Craneswater, St Jude and St Thomas. Two car club bays are also proposed to be installed at Lakeside in spring 2024, these will be the first EV car club bays in the city. Between September and December 2023, 370 trips were made using the car club vehicles, with a total of 2978 miles being travelled. The total drive time was 8767 hours (365 days) and the average length of hire was 24 hours / 9 miles.	
APV 2	Promoting bus use	Alternatives to private vehicle use	Bus based Park & Ride	2009	2032	Bus Operators	PCC	No	Funded	£10k-£50k	Implementation	Increased bus patronage has the potential to reduce the cars per person on the road and therefore reduce emissions.	Increase in bus patronage	The Public Transport team is continually working with bus operators to promote and increase bus patronage. To grow the market for regular (non-Park & Ride) bus travel, the Council have entered into an Enhanced Partnership with the bus operators First Solent and Stagecoach South. Through this partnership the Council and operators will deliver the Bus Service Improvement Plan, for which a Government grant of £48.3m was awarded in April 2022. In summer 2022 an additional Park & Ride route was run from Tipner to Southsea, serving Clarence Pier and the Castle/D-Day Museum. Supporting this service was a publicity campaign 'Bus to the Beach' using social media, run to attract users visiting the City.	Bus patronage levels are still recovering from the impact of COVID pandemic, and initial Government guidance to avoid using public transport. Plans for additional summer 2023 onwards Park & Ride Services subject to funding. Park and Ride contract currently being prepared for retender, securing its future for the coming years. Portsmouth has delivered 22.3% patronage growth in the last year, making it the Uk's number 1 city for bringing passengers back to the bus.
PGDC 1	Air Quality Planning and Policy Guidance	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2012	2040	PCC	None	No	N/A	N/A	Planning	N/A - future pollutants/emissions kept within limits	N/A	There is an ongoing involvement with Planning Policy on the air quality effects of developments through the Planning Process. Consideration is given to limiting air pollution issues which may arise from new developments both during and after construction. A strong air quality policy has been embedded in the emerging Local Plan - PLP35	

														Air Quality and Pollution. This is at Reg 19 stage. The Planning Policy Team has commissioned the Portsmouth Emission's Based Assessment an evidence-based study which considers the air quality impacts of the Local plan.	
PGDC 2	Climate Change Strategy	Policy Guidance and Development Control	Other	2023	2023	PCC	None	No	Not Funded	N/A		GHGs, mostly carbon dioxide from various sources, but also methane and nitrogen dioxides	Carbon reduction	Published. Reviewed annually, but doesn't contain data (all the moving parts are in the CAPs)	
PGDC 3	Portsmouth International Port Air Quality Action Plan	Policy Guidance and Development Control	Low Emissions Strategy	2019	Ongoing	PCC, PIP, DfT	Shape UK Interreg2 SEAs	No	Partially Funded	Not available	Implementation	There is the potential for significant reductions in emissions around the Port.	AQ monitoring for PM10, PM2.5, PM0.1, NO_2, Carbon and Sulphur	Portsmouth International Port has made a commitment to become the first net carbon neutral UK port by 2030, and the first zero emission port by 2050. Its sustainability plans link to government's Maritime Strategy to 2050, see https://portsmouth-port.co.uk/about-us/sustainability/ The Port has installed 5 real time air quality monitor as a result of the PECS (port energy and carbon savings) project, which was funded by Interreg 2 SEASs, and now have 1 years' worth of data. SHAPE UK funding enabled the digital twin ecosystem where the AQ monitor data is shared. However, the actual AQ monitors came out of a fund back in 2020 which allowed for their install, so I guess that project needs to be included.	Capacity to analyse monitoring data.
PGDC 4	Council Carbon Action Plan	Policy Guidance and Development Control	Delivery and Service plans	2020	2030	PCC	None to create but some measures within are funded from central government	No	Not Funded		Implementation	GHGs, mostly carbon dioxide from various sources, but also methane and nitrogen dioxides	Carbon Reduction	First CAP to be published in Q4 2023 Second cap (with 21/22 data) to be published early 2024	Funding, human resources, technological (no viable alternative yet)
PGDC 5	City Carbon Action Plan	Policy Guidance and Development Control	Delivery and Service plans	2019	2030	PCC	None to create but some measures within are funded from central government	No	Not Funded		Implementation	GHGs, mostly carbon dioxide from various sources, but also methane and nitrogen dioxides	Carbon Reduction	First CAP to be published in Q4 2023 Second cap (with 2020 data) to be published early 2024	Funding, limited PCC influence, city geography, technological (no viable alternative yet), engagement and community buy-in

PGDC 6	Multi Agency Groups	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality		Ongoing	NHS, PCC	None	No	Not Funded	N/A	Implementation	N/A	N/A	Two existing boards in place: Hampshire & Isle of Wight Integrated Care System (HIOW ICS) Sustainability & Energy Group Portsmouth Health &Wellbeing Board Air Quality and Active travel group	
PGDC 7	Clean Air Champions Project	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	2024	2025	NHS, PCC	None	No	Not Funded	N/A	Implementation	N/A		Clinical Clean Air Champion model under development with primary care, being piloted with one Primary Care Network	Aim is for champions to alert patients to the dangers of air pollution and support avoidance measures (such as use of air pollution monitoring tools to adapt exposure risk on polluted days).
PI 1	Provision of information regarding air quality, including real time monitoring data and information regarding assessments of air quality to enable public awareness of issues and success of actions implemented	Public Information	Via the internet	2019	2032	PCC	None	No	Not funded	N/A	Planning	N/A	N/A	The provision of real-time information remains under exploration and feasibility work with highways network management and passenger transport operators	Funding Capacity
PI 2	Sustainable Travel Behaviour Change	Public Information	Other	2012	2032	PCC	DEFRA, PCC	No	N/A	N/A	Implementation	<0.1µgm3 Raising awareness of sustainable travel.	Mode shift, particularly for short local journeys around the city	The promotion of sustainable travel is an ongoing element of many schemes including: Workplace Sustainable Travel Fund, rolling communications and campaigns, the Voi e-scooters pilot, and the My Journey programme.	Future running of specific behaviour change programmes will be dependent upon securing future funding.
PI 3	Air Quality Communications and Marketing - Anti Idling Campaign	Public Information	Via other mechanisms	2018	Ongoing	PCC	JAQU	Yes	Funded	£50k - £100k	Implementation	<0.1µgm3	Reduction of idling vehicles in the city Raising awareness and educating drivers about the impact of engine idling.	Anti-idling campaign ongoing across lifetime of CAZ, supported by Idling Behaviours public consultation.	Resource limited which lowers the level of citywide exposure ideally needed for behavioural change campaigns.
PI 4	Traveline	Public Information	Other	2016	2032	PCC	PCC	No	Funded	£10k - £50k	Implementation	N/A Although not delivering measurable air pollution reduction targets, public transport information supports uptake of active travel.	Continued up to date travel and public transport information on Traveline	Traveline consists of a national database for all bus stops and timetables which is updated daily, providing comprehensive information, and is used to populate all journey planning engines.	This an ongoing statutory service.

PI 5	Public transport information	Public Information	Other	2012	2032	PCC	PCC, with TCF element funded by DfT	No	N/A	N/A	Implementation	N/A Although not delivering measurable air pollution reduction targets, public transport information supports uptake of active travel. Improved accessibility and a more pleasant user experience will encourage increased bus patronage and therefore discourage car use	Provision of public transport information	SMS/ texting / bus timetable downloads; Improved Shelters with 90 real-time passenger information units installed in 2017/18. The TCF Tranche 1 has delivered 120 RTI units which have been installed at bus stops across the city, with a further 20 RTI pole only locations and 13 interchange screens with bus destinations and COVID information. On all 210 RTI units bus occupancy details are now displayed. BSIP has allocated further funding of £1.5m to expand RTI provision to include all stops in the city by summer 2024. Further planned BSIP schemes will improve the road layout, appearance, and resources of bus stops across the city. These will facilitate faster and more pleasant bus journeys, thus encouraging new patronage onto the network and out of their cars. Further BSIP funding is available to enhance Next Stop Audio and Visual technology on the buses serving the city. This will improve accessibility for service users with visual impairments and occasional visitors to the city, who are not familiar with the surroundings. 2 BSIP schemes to provide on board information screens to all of the buses that operate in the city and installation of over 300 new real time information displays to bus stops in Portsmouth are now in the delivery stage. These projects will greatly enhance convenience for bus passengers and should encourage new users, by removing a barrier to trying buses over other modes.	Journey planning and interactive mapping delayed COVID-19 restrictions.
PLET 1	Electric Vehicle Charge Point scheme - off street	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2018	2026	PCC	Charge points funded by City EV Bay marking	No	Funded	None	Completed	<0.1µgm3 This measure will initially only achieve a very low level of NO2 reduction. Potential for greater reductions over time as EV usage increases.	Installation of charge points and level of usage	Off street charge points have been installed at 3 car parks in the city: Isambard Brunel Multi storey, Esplanade car park and Clarence Pier car park. Clarence Pier car park is currently not accessible due to seafront works. A feasibility study regarding implementation of more off-street charge points in PCC owned car parks will be undertaken to improve their availability.	ongoing
PLET 2	Electric Vehicle Residential Charge Point scheme - phase 3	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote	2020	2025	PCC	Office for Zero Emission Vehicles (ORCS	No	Not funded	£1m - £10m	Planning	<0.1µgm3	Installation of further charge points and level of usage	Funding awarded for 320 chargepoints from OZEV. Chargepoint locations based on residential demand. Soft market testing completed.	Awaiting decision from cabinet meeting 20.03.24 to be able to go out and procure a supplier.

			Low Emission Vehicles, EV recharging, Gas fuel recharging				funding grant £887,430) 60% of funding. Remaining 40% input from supplier.							Looking to go out to procure a supplier.	
PLET 3	PCC Fleet Review	Promoting Low Emission Transport	Company vehicle procurement	2019	2024	PCC	PCC	No	Not funded	Not available	Implementation	Fleet of over 150 vehicles, although not all suitable to be swapped to EV/hybrid, could have a large impact on reducing pollutants/emissions created by PCC vehicles	Reduced emissions from Council vehicles	Future consideration to be given to PCC fleet procurement, with a view to moving away from diesel vehicles, and increasing the number of electric vehicles in the fleet. As council vehicles come up for lease renewal the Fleet team offer advice and technical expertise on the procurement of electric and hybrid vehicles. Since 2021 we have procured 27 EV's as direct replacement for diesel vehicles (18% of the fleet) with a further 9 on order. Other greener alternatives including hybrid vehicles (we have 4 to date) and the utilisation of HVO fuels being expanded (currently trialled with 25 Estate Services vehicles). we have had a setback with rolling out the HVO programme to all suitable PCC vehicles. We hope to bring this back on track and be able to offer it as a greener alternative by the end Q2 this year.	Further work is necessary to progress this further, however it is a clear aspiration of PCC and as a result an independent assessment of both the fleet and the working practices is currently underway that will help inform the future fleet renewal progress. Infrastructure, purchasing costs, vehicle availability, all hampering further expansion.
PLET 4	Electric Vehicle Promotion	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2018	2024	PCC	Funded through Defra Clean Air Grant	Yes	Funded	<£10k	Implementation	N/A	Uptake of electric vehicles/ULEV	Promotion of electric vehicle charge points available through OZEV's ORCS scheme, encouraging further uptake of electric and hybrid vehicles in the city. An off-street EV charge point trial also taking place at three city car parks Promotion of electric vehicle charge points available through OZEV's ORCS scheme, encouraging further uptake of electric and hybrid vehicles in the city. Portsmouth City Council EV page promotes all the charge points available for use that have been installed via the council. There is also a FAQs section along with other useful information on the webpage. Our comms team undertake general promotion of EVs as and when they can as part of the council's air quality improvements. Future promotion of future phases and installation of council installed chargepoints	ongoing

														will occur through a media/social media release.	
PLET 5	Electric Vehicle Rapid Chargers for Taxi/PHVs	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2019	2024	PCC Taxi/PHV Trade	DEFRA - JAQU	Yes	Funded	£1m - £10m	Implementation	<0.1µgm3 This measure will initially only achieve a very low level of NO2 reduction. There is potential for greater reductions to be achieved over time as EV usage increases across the city.	Uptake of EVs in taxi/PHV licensed fleet, usage of chargers	3 rapid charge points have been installed for taxis and PHVs in Stubbington Avenue Car Park, London Road car park and Isambard Kingdom Brunel Surface car park. There has been significant monitoring of the usage in Stubbington Avenue Car Park and this site has been given approval to be opened up to the general public to use by the end of August 23. Due to the situation with the on-street chargepoint switch off, JAQU have given PCC permission to temporarily open the other 2 rapid chargepoints. The 3 park and ride rapids have been installed and are awaiting full handover papers from supplier before commissioning to the public. The final site, All Saints Car Park, is awaiting a confirmed connection agreement from SSEN.	Stubbington: Complete London Road: Complete IKB: Complete Park and Ride: installation complete, awaiting commissioning All Saints: awaiting confirmation of connection agreement with SSEN
PLET 6	Electric Vehicle Infrastructure Strategy	Promoting Low Emission Transport	Other	2022	2023	PCC	None	No	N/A	N/A	Planning	This strategy will help support Portsmouth grow its EV chargepoint network to facilitate the uptake of EVs for residents in the city and provide a sustainable network for those visiting to charge.	Uptake of EVs and increased electric vehicle charge points	• Sep/Oct 2023 - Strategy consultations. Survey received 485 responses. • 64% agreed with the draft objectives, 21% disagreed. • We are looking to bring this forward for adoption in June • PCC has been awarded the £3.62m of LEVI funding that we submitted business case for, so the strategy will also support the many decisions related to EVI roll-out that this will fund over the next few years.	Resources to deliver.
PLET 7	Air Quality Improvement - Behaviour change non-charging measures	Promoting Low Emission Transport	Other	2019	2023	PCC	JAQU	No	Funded	£1m - £10m	Completed	Reduced vehicle emissions across city and local area		Ongoing monitoring of installed taxi/PHV trade EV chargers. All Clean Air Funding has now been spent and closed.	Funding, industry delays
PLET 8	Electric Vans	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2021	2023	PIP	Self-funded	No	Funded	£50k - £100k	Completed	On average the 4 vans have done 4k miles each over the first 2/3 years of usage.	Use of cars	4 electric vans are used constantly on site by staff.	N/A
PLET 9	Shore power Berth 1	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV	2022	2022	PIP	Self-funded	No	Funded	£1m - £10m	Completed	~131t CO2 p.a	Use of shore power	In use by SMS towage. Feedback from staff on vessels say that they rest better with reduced noise from running engines.	Cost of electricity will be a barrier with larger vessels.

			recharging, Gas fuel recharging												
PLET 10	Sea Change	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2023	2025	PIP, PCC, DfT, Innovate UK, Brittany Ferries, B4T, IOTICS, MSE International, Swanbarton, University of Portsmouth	DfT, ZEVI fund £19.8m in funding awarded	No	Funded	> £10m	Implementation	Significant reduction of vessel emissions at berth. AQMs have measured AQ at PIP for over 3 years, so we will have a full picture of the impact of shore power before, during and after.	AQ monitoring for PM10, PM2.5, PM0.1, NO2, Carbon and Sulphur. Also introducing noise.	Project is 6 months into a 18 month funded period. No risks foreseen and project is on track to meet objectives.	This mainly is around UK legislation for the uptake in shore power whilst at berth. EU ETS and EU fit for 50 supports shore power at berth, however proposed UK ETS is loose. Also, severe delays in publishing clean maritime plan and zero emission berth standard. Current marine fuels (all fossil fuel based) are heavily tax incentivised, at the moment we do not have an option for a marine tariff to provide shore power, therefore shore power is the more expensive option which is not a regulated requirement.
PTA 1	Sustainable travel options for staff business travel	Promoting Travel Alternatives	Workplace Travel Planning	2012	2032	PCC	DfT Capability Fund	No	Funded	£50k	Planning	<0.1µgm3	Uptake of pool bikes, electric vehicles for business staff travel	Waiting for the rest of the pool bikes to be delivered before we can launch. This is likely to be early September for the bikes and then launch mid-September/Oct and we will take the data over 12 months to see how many staff use them.	The impact of the COVID pandemic on the way we work has fundamentally altered working patterns, work locations and travel to work patterns. PCC is still working to capture this which does mean delays to Staff Travel Planning initiatives.
PTA 2	Community Active Travel Events/ Active Travel Marketing/ Comms Activities	Promoting Travel Alternatives	Promotion of cycling	2017	2024	PCC		No	Partially Funded	£50k	Implementation	<0.1µgm3	Delivery of cycling events and attendance levels	There are 4 get active events this year along with stomp for stamps 2023. The information on this can be found here: Get Active events - Travel Portsmouth Stomp for Stamps - Travel Portsmouth.	Continuation of this will be dependent upon funding resources.
PTA 3	Promoting Road Safety & Active Travel initiatives	Promoting Travel Alternatives	Promotion of cycling	2010	2031	PCC	PCC	No	Not funded	N/A	Implementation	<0.1µgm3 Promotion of active travel initiatives will support the uptake of sustainable travel modes and contribute to positive travel behaviour change.	Delivery of cycling, road safety and active travel initiatives	We are delivering a number of different schemes across the city. Current Schemes include Stomp for stamps which promotes children to get out and be active over the summer whilst providing a prize at the end. Green space challenge again promoting children to get out and see green spaces. Get Active Events. This saw over 1000 people take part in active travel focused activities such as smoothie bikes, learning to ride, cycle tracks, bike repairs, bike marking. The events for this year have now been delivered. The stomp ends at the end of the summer.	Continuation of events will be dependent upon funding resources.
PTA 4	Safer Routes to School Minor Remedial Works	Promoting Travel Alternatives	School Travel Plans	2014	2030	PCC	PCC - LTP	No	Funded	£100k - £500k	Planning	<0.1µgm3 Safer routes to school schemes	Completion of schemes, and uptake by parents/ pupils	This work is on-going and will be completed year on year. This is for the New Road/New Road East junction	No funding for this type of work in the 2022-23 budget. Any successful bids for funding will

												tend to be small scale, supporting sustainable travel to school through increasing safety and supporting walking to school.		improvements. There are preliminary designs, awaiting detailed designs.	allow for a program of small-scale schemes to be implemented
PTA 5	Pompey Monster Walk to School Challenge - school behaviour change	Promoting Travel Alternatives	Promotion of walking	2016	2024	PCC	DEFRA PCC - Travel Demand Management Funding Further work funded from DfT Capability fund	Yes	Funded	£10k - £50k	Completed	<0.1µgm3 Supporting sustainable travel to school.	Uptake of scheme by schools	The Pompey Monsters Scheme was introduced in 2016/17, and a trial of the scheme was carried out at three schools in the city, as part of the STTY scheme. This successful initiative is popular with the children and encouraged an increase in walking to school. This scheme was delivered to 4 further schools within or close to AQMA's in 2018/19, through the DEFRA Air Quality Grant. The scheme now supports 6 schools to encourage travel behaviour change. School travel challenge accompanied School Streets trials in 2021 and 2022. 6 schools have benefitted from the Pompey Monster Walk to School Challenge through the Clean Air Grant. Half term events in libraries encouraged children to walk with their families. Evaluation is underway to assess modal shift. A new air quality Pompey Monster was developed, Breezy, and air quality messages promoted in the school via assemblies, and also the Pompey Monster packs.	December 2023 - No further work on this has taken place since the Clean Air Grant finished. There has been work on School Streets through the Active Travel Fund and the Capability Fund.
PTA 6	School travel plans	Promoting Travel Alternatives	School Travel Plans	2014	2032	PCC	PCC, with funding from Air Quality Grant to deliver further schemes in 2018/19	Yes	Funded	£10k - £50k	Completed	<0.1µgm3 Supporting sustainable travel to school.	Delivery of school travel plan schemes, and effect on school travel models	Active travel pack for schools created in 2022 includes tools for pupil travel monitoring, facilities audit and variety of active travel initiatives to choose from. To be shared with wider number of schools as a part of engagement e.g. walk to school challenge and School Streets trials.	Further development of school travel plan schemes dependent on funding and resources - There hasn't been statutory funding for School Travel Plans since 2010.
PTA 7	Workplace travel plans (WPTP)	Promoting Travel Alternatives	Workplace Travel Planning	2014	2024	PCC	PCC DfT Capability Fund	No	Funded	£10k - £50k	Planning	<0.1µgm3 Workplace travel plans can support increases in sustainable travel.	Number of travel plans implemented, or engagement with WPTP activities	Through the work delivered through the Clean Air Grant 2018/19 provided various engagement materials to the 4 businesses involved, including, Clean Air Initiative flyers, travel information flyers, printed and online pledge cards. Clean Air Initiative flyers were also distributed to SMEs along the AQMA 6 corridor. Through "lunch and Learn" sessions, eco driving, bike doctor	Year on year continuation of 2023 scheme will be dependent on funding.

														Portsmouth City Council - ASR 2020 25 and engagement, 94 people have pledged to travel to work more sustainably. Follow up emails will be sent to all those that have pledged to see if there has been any modal shift. Further Workplace Travel Planning activities are dependent upon further funding becoming available Further to previously completed workplace travel planning opportunities, engagement through STTY and WSTF will help to establish a greater base of workplaces to work alongside and develop travel plans. We are launching a trial behavioural change workplace travel planning programme in mid-2023, this will tie in with a further round of Workplace Sustainable Travel Funding.	
PTA 8	Workplace Sustainable Travel Fund (WSTF)	Promoting Travel Alternatives	Workplace Travel Planning	2019	2024	PCC Local businesses	DEFRA Round 1 PCC Rounds 2 & 3	Yes	Funded	£50k - £100k per round	Implementation	<0.1µgm3 Whilst this fund would only make a very small impact on local air pollution levels, it is a useful measure in raising awareness of and supporting sustainable travel for local work-related journeys.	Delivery of WSTF to businesses located close to or within an AQMA	In 2020/21 19 business benefitted from up to £5,000 grant funding packages. In 2021/22 18 businesses benefitted from up to £4,000 grant funding packages. The 2023/24 round is currently live and expected to end by mid-May 2024.	Year on year continuation of 2023 scheme will be dependent on funding.
PTA 9	Promote walking Road Safety & Active Travel initiatives	Promoting Travel Alternatives	Promotion of walking	2010	2030	PCC Portsmouth Cycle Forum	N/A	No	Not funded	N/A	Implementation	<0.1µgm3 Raising awareness of sustainable travel.	Development of new walking and cycling strategy, uptake of initiatives such as Pompey Monsters Walk to School Challenge	Walking and cycling map is a popular resource. Planning is underway for an interactive map on the council website. Works in conjunction with stakeholders such as Portsmouth Cycle Forum continues. Education programmes in schools such as Bikeability and Pompey Monsters continue to be delivered. Junior Road Safety Officers are recruited annually, and Portsmouth Smart Steps awards scheme has been developed in line with this.	Further funding will be required to take forward into the future
PTA 10	SEHRT T2 - Active travel (Anchorage Road/Fratton Road/Goldsmith Ave and Isambard Brunel Road/Somers	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure		2023	PCC	DfT (TCF funding)	No	Funded	£1m - £10m	Planning	N/A		Construction began on 11th January 2023. The project is complete with 3 months left on the defects period which is due for sign off on the 30th July'24	All risks and issues flagged at their own Boards which are separately managed by their local governance.

	Road/Fratton Bridge)														
PTA 11	School Travel Challenge	Promoting Travel Alternatives	Promoting of walking/cycling	2022	2023	PCC/Schools				£10k - £50k	Implementation			Planning school engagement	
PTA 12	Led Rides	Promoting Travel Alternatives	Promotion of cycling	2023	2024	Cycling with Anne, Pedal Power, Beryl, GC Bike Repairs, British Cycling, BH Live.	DfT Capability Fund	No	Funded	£10k - £50k	Implementation	<0.1µgm3. This measure will support cycling in the city.	Number of public engaged.	Set up and in implementation including providing group rides and associated support including 1-2-1 training, bike repairs, access to bike share and cycling advocate role for more confident cyclists. Dashboard monitoring of 50 cyclists for 1 year is also included.	Year on year continuation of 2023 scheme will be dependent on funding.
PTA 13	Hybrid Working Policy	Promoting Travel Alternatives	Encourage / Facilitate home-working	2022	N/A	PCC		No	Funded		Implementation	Hybrid working and Work from home can lead to a reduction in pollutants due to fewer commuter journeys being made, especially those made by car	Portion of Portsmouth City Council employees working remotely	Portsmouth City Council's *Hybrid Working Policy* was published in July 2022. It sets out the Council's approach to hybrid working and key considerations.	There are roles within PCC where hybrid working is not possible, and employees need to attend the workplace every day.
PTA 14	Segregated cycle route adjacent to Harbourside Caravan Park	Promoting Travel Alternatives	Promotion of cycling	2024	2025	PCC	PCC	No	Funded	£1m - £10m	Planning	<0.1µgm3. This measure will support cycling in the city.	Number of public using cycle route	Funding awarded, planning underway	As work has only just begun no barriers have yet been identified
PTA 15	Improvement to pedestrian access, Kendall's Wharf	Promoting Travel Alternatives	Promotion of walking	2023		PCC	PCC	No	Funded	£100k - £500k	Planning	<0.1µgm3. This measure will support walking in the city.	Popularity of route, engagement of public	Funding awarded, planning underway. Work will also include a study of the corridor as a whole	As work has only just begun no barriers have yet been identified
TM 1	LTP Programme	Traffic Management	Strategic highway improvement, re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane.	2012	2032	PCC	PCC DEFRA DfT	Yes	Partially Funded	>£10m	Implementation	<0.1µgm3 Pollution reductions achieved by individual LTP schemes will be low, however the combination of these measures would likely have an overall positive impact on assisting with reducing levels of NO2.	Implementation of LTP schemes	Schemes being developed and delivered through the LTP programme, including improvements to Active Travel facilities around the city, aim to encourage modal shift and will provide improvements to local air quality.	Existing programme of schemes continues to be developed and delivered, with an allocation of 24/25 funding for the delivery of additional schemes around the city.
TM 2	Traffic Signal Reconfiguration	Traffic Management	Other	2014	2032	PCC	PCC	No	Not funded	N/A	Implementation	<0.1µgm3 Will provide Improved journey	Completion of signalised Junctions and	A number of "health-check" surveys have been undertaken by Yunex (traffic signal supplier) on key signalised	Dependent on available funding.

												times and less congestions in specific areas.	crossing review	junctions to identify hidden defects and any efficiencies that could be gained. Defects have been rectified and improvements made where funding has allowed or when Colas have undertaken Life-Cycle-Replacement works to replace traffic signals.	
TM 3	Eastern Corridor Phase 2 Works	Traffic Management	Other	2017	2032	PCC	PCC	No	Not Funded	£10k - £50k	Planning	Significant congestion can occur at this location. Traffic management solutions that alleviate standing traffic will potential contribute to sustained air quality improvements over time.	Completion of all schemes of works Air quality monitoring	A comprehensive study of the Eastern Road corridor was conducted, which will deliver identifiable solutions for this key corridor into the city. The study identified problems of current uses and identified future uses and solutions. Further development of the plan is on hold to ensure shared interests with the Coastal Defence strategy are met. Some sections along the corridor completed, but additional funding required to complete programme.	Milton Common Cycle Path falls within a Site of Importance for Nature Conservation (SINC) and is close to sites that are important for Brent Goose feeding. Planning permission or permitted development is required. Development alongside Coastal Defence works.
TM 4	SEHRT T2 - City Centre North/City Centre South/Lake Road	Traffic Management	UTC, Congestion management, traffic reduction	2022	2024	PCC/Alan Griffiths (Contractors)	FDfT via Transforming Cities Fund (TCF)	No	Funded	£1m - £10m	Implementation		Completion of all schemes of works	The schemes commenced on site on 11th September 2023 and are to be completed by mid-July 2024. The DfT approved delivery budget is £15.54 million. The works on site are progressing with few issues identified on site.	Delays are anticipated on Charlotte Street due to ongoing utility works. The Portsmouth Water main must be replaced because of its poor condition, with the pipe dating back to the 1880s. As a result, this will affect the contractor's schedule for carriageway construction activities in this section. Additionally, the existing subgrade is in poor condition, necessitating full road reconstruction at this point. The Lake Road programme has experienced a delay due to additional low voltage (LV) and high voltage (HV) diversions. The contractor has formally submitted these changes through Contractual Events (CEs), and they now require assessment by the Project Manager (PM). If approved, this will result in an increase in project spending.
TM 5	SEHRT T2 - Portsbridge Area Junctions	Traffic Management	UTC, Congestion management, traffic reduction	2022	Mar-24	PCC/Alan Griffiths (Contractors)	FDfT via Transforming Cities Fund (TCF)	No	Funded	£1m - £10m	Implementation		Completion of all schemes of works	Unlikely to go ahead due to budget constraints.	Budget constraints

TM 6	SEHRT T2 - Rudmore Roundabout	Traffic Management	UTC, Congestion management, traffic reduction	2022	Jan-23	PCC/Alan Griffiths (Contractors)	FDfT via Transforming Cities Fund (TCF)	No	Funded	£1m - £10m	Completed		Completion of all schemes of works	Project finished construction - Jan 2023	Final account & damages to be finalised by end of August 2023
TM 7	SEHRT T2 - Spur Road Roundabout	Traffic Management	UTC, Congestion management, traffic reduction	2022	2023	PCC/Alan Griffiths (Contractors)	FDfT via Transforming Cities Fund (TCF)	No	Funded	£1m - £10m	Implementation		Completion of all schemes of works	Unlikely to go ahead due to budget constraints.	Budget constraints
TM 8	School Streets	Traffic Management	Other	2021		PCC/Sustrans	ATF4, PCC	No	Funded	£50k - £100k	Implementation		Uptake of scheme	5 schools took part in trials 2021-2022, work started in 2023 on making two of those permanent. Work under way with more schools and more trials planned for 2024	School buy-in or school lead is a must, as well as ongoing work with the school on active travel prior implementation.
TPI 1	BSIP - Highways Schemes	Transport Planning and Infrastructure	Bus route improvements		2025	PCC	DfT	No	Funded	£10k - £50k	Implementation	Increased bus patronage has the potential to reduce the cars per person on the road and therefore reduce emissions.	Reduction in average journey times (making bus travel more attractive)	Introduction of the new bus lanes or bus priority or improvement of existing bus lanes at targeted locations within the city. Various bus priority highways projects are now in the latter stages of design stage.	
TPI 2	BSIP - Fares Initiatives	Transport Planning and Infrastructure	Bus route improvements		2025	PCC and Operators	DfT	No	Funded	£1m - £10m	Implementation	Increased bus patronage has the potential to reduce the cars per person on the road and therefore reduce emissions.	Increase patronage. Various projects to give free access to bus network and embed modal change.	Various fares initiatives to introduce a new cohort of residents and workers to try bus use and in so doing embed modal change long term. 5 ticketing initiatives have now been delivered and will be supported by BSIP funding until March 25. These tickets potentially provide increased value and choice for all Portsmouth bus users and focussed schemes aimed at encouraging young people and job seekers as part of their offer. 3 multi operator tickets were also launched as these have been identified as a key objective to encourage more people to use bus.	
TPI 3	BSIP - Bus and Bus Stop Infrastructure	Transport Planning and Infrastructure	Bus route improvements		2025	PCC and Operators	DfT	No	Funded	£10k - £50k	Implementation	Increased bus patronage has the potential to reduce the cars per person on the road and therefore reduce emissions.	Increase patronage. Various projects to make bus travel more convenient, pleasant, and accessible.	Various projects to improve information and facilities both on buses and at bus stops, plus schemes designed to prioritise buses in traffic. All designed to make bus use quicker, easier and a more pleasant experience for the service user. 7 bus stop improvement projects, aimed at increasing passenger comfort and convenience and / or bus punctuality are now in the design stage and will be delivered over the next 12 months. A potential programme of measures has been produced by speaking with Portsmouth bus users (including representatives with mobility and visibility	

													challenges), bus drivers and PCC transport experts.	
TPI 4	BSIP - Service Enhancements	Transport Planning and Infrastructure	Bus route improvements		2025	PCC	DfT	No	Funded	£1m - £10m	Implementation	Increased bus patronage has the potential to reduce the cars per person on the road and therefore reduce emissions.	Increase patronage. Various projects to act as seed funding (towards commercial viability) for the introduction of improved service levels.	Various projects intended to either enhance existing routes, introduce expanded network coverage, or improve connectivity of existing modes. This will include traditional bus services and more flexible demand responsive options. BSIP has now delivered service enhancements across Portsmouth, providing higher frequencies and longer operational hours, in some cases now offering 24 / 7 services.	
TPI 5	BSIP - Other	Transport Planning and Infrastructure	Bus route improvements		2025	PCC	DfT	No	Funded	£1m - £10m	Implementation	Increased bus patronage has the potential to reduce the cars per person on the road and therefore reduce emissions.	Increase patronage. Education and enforcement schemes all aimed to make bus travel more convenient and accessible.	Education pieces, bus lane enforcement, bus passenger charter, stakeholder consultation, increased marketing.	
TPI 6	Solar Array	Transport Planning and Infrastructure	Other	2021	2023	PIP, PCC, Custom Solar	Funded by PCC with grant	No	Funded	£1m - £10m	Completed	2660 solar panels installed, 1.2-megawatt peak system, 1.5 megawatt battery, providing 35% of on-site power. Reduction of grid electricity and associated emissions.	Kwh production of solar system	Full system become fully operational last month – more data on usage to follow.	Issues around local DNO hook up and land ownership in/around the port led to some long delays with this project.
TPI 7	Voi scooters and Beryl Bikes	Transport Planning and Infrastructure	Promoting Low Emission Public Transport	2021	on-going	PIP, PCC, Solent Transport, Voi, Beryl	Part of Solent Transport Scheme	No	Funded	N/A	Implementation	See stats	Use of scooters/bikes	Voi statistics up until July 2023 Portsmouth Port Start rides: 1,905 End rides: 1,761 Total rides: 3,666 Whale Island Way Start rides: 573 End rides: 574 Total rides: 1,147 Beryl scheme only just implemented	No barriers
TPI 8	Cycle parking across the city	Transport Planning and Infrastructure	Cycle network	2012	2032	PCC	PCC	No	Funded	£10k-£50k	Implementation	<0.1µgm3 This measure will support cycling in the city.	Utilisation of bike parking provision	Cycle parking is continually introduced and improved as required and as funding is available. Further cycle parking will be provided at various locations through ongoing schemes. PCC	Continuation of this will be dependent upon funding.

														oversaw the provision of new bike 'hangars' which will facilitate the storage of multiple bikes so far 9 hangers have been installed. New cycle corrals at 45 spaces on street have now been delivered. A trial of new cycle stands for Locksway Road and Copnor Road has now been delivered. Followed by a trial for cycle storage at the Park and Ride but this is likely Q2 2023 which is still waiting to be completed.	
TPI 9	Local Cycling and Walking Infrastructure Plan (LCWIP)	Transport Planning and Infrastructure	Other	2017	2031	PCC, DfT, Portsmouth Friends of the Earth, Portsmouth Cycle Forum, Sustrans, WSP, SEHRT Delivery Board	DfT - LCWIP technical development. PCC - Feasiblity and Schemes. SEHRT - Schemes	No	Partially Funded	>£10m	Implementation	<0.1µgm3. This measure will support cycling in the city.	Completion of LCWIP. Scheme delivery	The Portsmouth Local Cycling and Walking Infrastructure Plan (LCWIP) was adopted in February 2022. The long list of schemes will be delivered on a priority and available funding basis, with the LCWIP acting as a dynamic document that will be re-profiled as schemes are delivered. SEHRT active travel schemes to be delivered early 2023 are all included in the LCWIP. Some sections of Eastern Road improvements are also included in the LCWIP - this has been put forward for capital funding and funding from SUSTRANS and further bids such as the Active Travel Fund 4.	LCWIP routes caveat that additional land may be required for construction - limited opportunity for land grab and purchase. Many schemes are yet to have funding identified.
TPI 10	e-scooter Hire Scheme	Transport Planning and Infrastructure	Promoting Low Emission Public Transport	2021	2023	PCC, VOI	Solent Transport/ DfT/Voi	No	Funded	£100k - £500k	Implementation	<0.1µgm3. This measure supports micromobility across the city.	utilisation, % mode shift from private vehicles, accident rates, parking compliance	For e-scooters rentals, from the launch of the trial in March 2021 until Dec 2023, around 81,000 rental e-scooter users collectively made 959,682 trips of which 422,604 would have been made by private vehicles based on user survey data. Voi calculates that this has removed 211 tonnes of CO2 equivalent from the atmosphere, as well as improving local air quality by reducing PM2.5 particulate emissions by 31kg. We are currently scrutinising the carbon savings.	Identifying suitable sites for e-scooter rental parking so the scheme is accessible across the city
TPI 11	Bike Hire Scheme	Transport Planning and Infrastructure	Public cycle hire scheme	2022	2024	PCC Transport PCC Infrastructure PCC Planning Solent Transport Beryl	DfT Future Transport Zone Grant Funding	No	Funded	£500k - £1m	Implementation	<0.1µgm3 This scheme is likely to provide only a very small reduction in air pollution initially, however, there is the possibility that greater overall reductions could be achieved over time, as	utilisation and % mode shift from private vehicles	From launch until 2023, 9,547 bikeshare users collectively made 49,738 trips. Beryl calculates that this has removed 2.7 tonnes of CO2 equivalent but hasn't calculated PM2.5 savings yet.	Due to COVID-19 and Brexit the industry supply of bikes and e-bikes is currently limited, which is likely to affect delivery schedule for this project.

												uptake of the scheme increases.			
TPI 12	Quiet Routes & Cycle Infrastructure	Transport Planning and Infrastructure	Cycle network	2016	2031	PCC	PCC	No	Funded	£100k - £500k	Delivered	<0.1µgm3 Supports travel behaviour change, strengthening the cycle routes in the city, particularly for short local journeys.	Upgrading of signage	A number of 'Quieter Routes' have been marked out in the city, with the use of coloured stickers on lampposts. There are currently 5 routes between the north and south of the city, and 5 between the east and west. Signage was upgraded on these routes during 2019/20 with continued investigation of new signage to further improve the routes.	Funding, staff capacity
TPI 13	ZEBRA (Zero Emission Bus Regional Area Grant)	Transport Planning and Infrastructure	Bus Route Improvements	2019	2025	PCC Hampshire County Council First Solent	DfT	No	Funded	£1m - £10m	Implementation	<0.1µgm3 This scheme has the potential to deliver significant benefits to the city in terms of public transport provision as these buses will have no tailpipe exhaust emissions.	Delivery of schemes.	The project has been progressing route by route, Signage will continue to be upgraded over 2023 and 24. This project is on hold at the moment due to staff capacity.	The limitation is that there is no further ZEBRA round scheduled at present and Stagecoach would like to introduce electric buses for Portsmouth but are waiting on future funding to help with the extra costs.
TPI 14	Transforming Cities Fund / SEHRT	Transport Planning and Infrastructure	Other	2019	2025	PCC First Bus Stagecoach	DfT Bid awarded with match funding provided by each of the bidding authorities and their partners First Bus, Stagecoach, and the borough councils.	No	Funded	>£10m	Implementation	This scheme would deliver significant benefits to the city in terms of public transport provision and promoting active travel alternatives.	Completion of works	SEHRT programme closes this summer, with works to City Centre South completes in April, Unicorn Gate in June, Lake Road in June, and Charlotte Street in July.	
TPI 15	East West Active Travel Corridor Phase 2	Transport Planning and Infrastructure	Promotion of walking	2023	2024	Cycling with Anne, Pedal Power, Beryl, GC Bike Repairs, British Cycling, BH Live.	LTP / Active Travel England Fund Round 4	No	Funded	£500k - £1m	Implementation	<0.1µgm3. This measure will support walking and cycling in the city.	Number of walking and cycling counts	Near to completion, due mid-April.	No barriers

2.5 $PM_{2.5}$ – Local Authority Approach to Reducing Emissions and/or Concentrations.

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of $PM_{2.5}$ (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that $PM_{2.5}$ has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

PM is a generic term used to describe a complex mixture of solid and liquid particles of varying size, shape, and composition. Some particles are emitted directly (primary PM); others are formed in the atmosphere through complex chemical reactions (secondary PM). The composition of PM varies greatly and depends on many factors, such as geographical location, emission sources and weather. The size of the particles and the duration of exposure are the main determinants of the potential adverse health effects. Particles larger than 10µm are mainly deposited in the nose or throat, whereas particles smaller than 10µm pose the greatest risk because they can be drawn deeper into the lung. The strongest evidence for effects on health is associated with fine particles ($PM_{2.5}$). Exposure to PM increases mortality and morbidity from cardiovascular and respiratory diseases and can cause cancer. It is also causally linked to dementia and decline in cognitive function. There is growing evidence for associations with adverse birth outcomes and diabetes.

The main source of primary particulate emissions is combustion, such as from vehicles, domestic combustion, and power stations. Other man-made sources include industrial processes and tyre and brake wear. Natural sources include wind-blown dust, sea-salt and soil particles.

With current measures, outdoor concentrations of $PM_{2.5}$ are anticipated to further decline in the coming decades, although improvements will inevitably begin to slow, reflecting that many of the largest and most readily abated sources have already been addressed. What is left is a diverse mix of sometimes diffuse emissions, many of which have a more limited scope for reduction. As UK emissions reduce, transboundary particulate matter - which is not directly reducible through national action - and natural emissions become a larger fraction of the PM that remains. In the long-term however, $PM_{2.5}$ must inevitably reach a non-zero plateau in concentration that cannot be practically reduced further through reasonable technical or policy interventions. That value will

depend on willingness to abate the remaining controllable emissions and external factors relating to natural emissions, geography, and weather. The complex contributions to future $PM_{2.5}$ make this the most difficult pollutant to forecast long term with confidence.

PCC is taking the following measures to address $PM_{2.5}$:

Local hot spot background pollutant maps provided electronically by Defra also give a basic local background concentration for $PM_{2.5}$. This information may show areas of higher $PM_{2.5}$ concentrations which PCC could assess to determine if there are local particulate issues where specific measures could be implemented to reduce particulate emissions.

The above method can further be used to establish local $PM_{2.5}$ Annual Mean concentrations, identify the local health of particulate matter and identify any local hot spot areas for particulate matter that have not been identified to date. This will enable PCC to establish baseline figures for $PM_{2.5}$ with the aim to improve on the established baseline, including the possibility of setting targets for a measured reduction in the future, and to target resources to assess and improve any identified hot spot areas for $PM_{2.5}$.

The origin of $PM_{2.5}$ can be usefully categorised as being 'primary' or 'secondary'. Primary $PM_{2.5}$ is pollution released directly from a source, such as a tailpipe, the abrasion from a brake pad, or wear of a tyre on the road. Secondary $PM_{2.5}$ are particles generated in the atmosphere from chemical reactions, typically occurring over hours to days, and are formed from gaseous precursor pollutants such as NOx, ammonia, and VOCs. Secondary PM is further sub-classified as secondary inorganic aerosols and secondary organic aerosols, both of which give rise to adverse health effects.

In many locations, urban and rural ambient $PM_{2.5}$ concentrations have declined over the last 20 years, with secondary particles now frequently making up a large fraction of the $PM_{2.5}$ that is experienced. This has implications for future policy and action. Primary $PM_{2.5}$ is a source of pollution that is potentially under direct and local control, while secondary $PM_{2.5}$ is a by-product from cumulative emissions of precursors from multiple sources and over large geographic areas, including those accumulated from transboundary movement of pollution between countries. Secondary $PM_{2.5}$ is harder to control as it depends on the chemical and physical interaction of pollutants, which can produce complex, non-linear responses to reductions in precursor emissions.

There is a multiplicity of primary sources in Portsmouth, including tailpipes, vehicle friction and abrasion, construction dust, combustion heating systems, cooking and so on.

Historically substantial benefits to $PM_{2.5}$ air quality could be achieved through tackling these urban sources; however, these are difficult to resolve locally. Given that a significant contribution to particulate pollution remains road traffic related, additionally dealing with the automotive related pollutants of PM_{10} and NO_2 may inherently reduce levels of $PM_{2.5}$. PCC will however continue with its work in respect to the burning of solid flues particularly within our designated smoke control areas.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

This section sets out the monitoring undertaken within the year 2023 by both PCC and Defra, and how it compares with the relevant NAQO. In addition, monitoring results are presented for a 5-year period between 2019 and 2023 to allow monitoring trends to be identified and discussed.

PCC's NO_2, $PM_{2.5}$ and PM_{10} monitoring programmes are annually assessed to ensure that the LAQ monitoring requirements of the LAQ Review and Assessment (R&A) process, as set out in the LAQM TG(16) Defra's Technical guidance, are met. This includes the additional Ambient Air Quality Directive (AAQD) measurement requirements.

According to AAQD measurements must meet certain siting requirements. These requirements must be met for measurements collected by either method (automatic chemiluminescence analysers or Nitrogen Dioxide Diffusion Tubes (NDDT)). A summary of the NDDT siting requirements outlines that siting requirements for NO_2 measurements at roadside / urban traffic sites must be carried out at locations which meet specific siting requirements:

- Measurements should not be sited within 25m of a major junction.
- Measurements should be made within 10m from the kerbside (NB. given the uncertainties in assessing access using aerial photography, roads with no clear access within 15m may be excluded from the PCM modelling).
- The inlet sampling point should be within 1.5-4m above the ground.
- Measurements should be representative of LAQ for a street segment no less than 100m in length.

LAQ monitoring program has been subject to the following changes since the publication of the 2017 ASR:

- In accordance with monitoring requirements, there has been significant change to PCC's LAQ monitoring program within the period 2018-2019 as the number of the newly added NDDT sites increased to reach 142 sites. This substantial increase in NO_2 monitoring using NDDT is to meet both PCC requirements under LAQM regime and stipulated monitoring requirements.

- PCC expanded the NDDT network further in the course of 2020 to reach 155 locations.

- The NDDT network was expanded further in 2021 by 72 NDDT to reach 227 locations to allow for an effective assessment of the introduction of the CAZ from November 29th, 2021 (excluding six co-locations sites).

- Up to the end of 2022, the NDDT network has covered 233 monitoring locations (including the six co-location sites).

- Some of the added monitoring locations are within the 2 exceedance road links as identified by PCM model for Portsmouth. This local AQ monitoring is to be used instead of the corresponding PCM modelled concentrations for the purposes of determining compliance or non-compliance with the 40 µg/m^3 limit value. Other added monitoring locations across the city were identified as having similar criteria to those identified in the 2 road-links by the PCM model.

- The NDDT network is kept to date (2023) at 227 locations (excluding six co-locations sites).

- In addition, to the above, in 2021 PCC acquired and located a new continuous monitoring station that is sited within Alfred Road for reviewing and assessing the impact of the CAZ.

- PCC currently monitor local AQ and in doing so meet the following requirements as set out in LAQM.TG, where emphasis has been placed, for the NO_2 Annual Mean NAQO, on monitoring and assessing non-occupational above or below ground level outdoor locations, where members of the public might be regularly exposed. These include:
    - Building facades of residential properties
    - Schools, hospitals, care homes, library facades etc.

The LAQ monitoring results presented in these sections were subjected to various corrections depending on the monitored pollutant, monitoring methodology, and monitored duration. The LAQ monitoring results presented in this section are, where relevant, adjusted for bias, annualisation (where the Annual Mean data capture is below 75% and

greater than 25%), and distance correction. **Further details on these adjustments are provided in section 3.2.1.1 and Appendix C**.

In addition, monitoring results are presented for a 5-year period between 2018 and 2022 to allow LAQ monitoring trends to be identified and discussed.

3.1 Defra's Comments of Previous ASR (2023)

This report was prepared with Defra's comments on the previous ASR (2023) Appraisal report in mind. Those comments, most of which were cosmetic regarding data presentations, were taken onboard.

Defra issued a report as result of its subsequent appraisal of the 2023 ASR that contained a list of key comments that are highlighted in italics below:

- *Additional information is required to determine whether annualisation has been carried out correctly and how the 'AURN' and 'Defra' stations have been used to determine the final Annualisation factors used. Additional calculations should be provided and further commentary on the sources of this data and how the two different data sources have been used together to give the annualisation factor used* (This is dealt with in the updated version of 2023 ASR and taken onboard in this 2024 ASR)**.**
- *The 'Level of Exceedance' concentrations in Table 2.7.1 do not seem to match the results in Table A.2. If the results in Table 2.7.1 are only for relevant exposure, this should be made clear and only a single number reported, that being the max concentration recorded at relevant exposure within that AQMA,* (This is dealt with in the updated version of 2023 ASR and taken onboard in this 2024 ASR).
- *The monitoring site names within Table A.3 do not align with those in Table A.1 within the report. This should be clarified. It is noted that these do align in the uploaded Excel document.* (This is dealt with in the updated version of 2023 ASR and taken onboard in this 2024 ASR).

3.2 Local Air Quality Monitoring methods

3.2.1 Real-time Continuous Air Quality Monitoring

PCC continued undertaking automatic (continuous) monitoring at the 5 PCC owned CAQMS during 2023 (including for the first-time data from the newly established CAQMS

in Alfred Road). In addition, LAQ monitoring data, from the Defra's CAQMS located in Anglesea Road is included in this report.

Details of all CAQMS sites detailed are tabulated in **Table A.1 (Appendix A)** and locations are shown on **Map.1 (Appendix D)**.

Maps showing the location of individual CAQMSs and their proximity to AQMAs are also provided in **Appendix D** as follows:

- Map 1 shows the CAQMS locations across the city.
- Map 2, Map 3, Map 4, Map 5, Map 6, and Map 7 show respectively individual locations of PCC's and Defra's owned CAQMSs: London Road, Gatcombe Park, Burrfields Road, Mile End Road, Anglesea Road and Alfred Road.

NO_2, $PM_{2.5}$ and PM_{10} continue to be continuously monitored as outlined below in accordance with the QA / QC protocols documented in **Appendix C**:

- CAQMS C2 (**Map 2, Appendix D**): This CAQMS is located in a relatively narrow busy roadside shopping area where large numbers of pedestrians are present (with pavements in places approximately only 2 metres). It is located within AQMA6. It is originally a fixed Kerbside CAQMS set up to monitor NO_2, PM_{10} and $PM_{2.5}$ generated by the road traffic along London Road before the pavement was enlarged. Buildings in the immediate vicinity are predominantly commercial. However, residential units are located further north and south of the site typically at first floor level above retail outlet units. This shopping location has some of the characteristics of a street canyon-like siting with slow moving road traffic often causing congestion.

- CAQMS C4 (**Map 3, Appendix D**): An Automatic Urban and Rural Network (AURN) CAQMS located in an urban background location at Gatcombe Park Primary School, Curtis Mead. This station was fully refurbished in 2021. The pollutants monitored are NO_2, PM_{10} and $PM_{2.5}$.

- CAQMS C6 (**Map 4, Appendix D**): This is a fixed roadside CAQMS established since 2007 to monitor NO_2 and PM_{10} generated by the road traffic along Burrfields Road. This station is located at a junction with large numbers of pedestrians and residential properties. Buildings in the immediate vicinity are a mixture of both commercial and residential. It was mainly set up to monitor road traffic related

pollution generated from the adjacent Burrfields Road / Copnor Road junction within the revoked AQMA3. A PM_{10} analyser was installed within this station in 2021 during our refurbishment programme.

- CAQMS C7 (**Map 5, Appendix D**): This CAQMS is located within AQMA11 approximately 6.5 metres from Mile End Road kerb in a residential area (Roadside CAQMS). Buildings in the immediate vicinity are all residential. It is a fixed roadside station established since 2007 to monitor road related NO_2 PM_{10} and $PM_{2.5}$ along Mile End Road and the southern end of the M275 into the City.

- CAQMS C8 (**Map 6, Appendix D**): In accordance with Ambient Air Quality Directive 2008/50/EC, Bureau Veritas identified Anglesea Road (A3) as a road link of main interest in respect of compliance in May 5th 2016 to enhance the UK coverage of sites in order to better understand the nature of the compliance challenges. As a result, the required site type in the Portsmouth Urban Area was identified as an urban traffic site, which namely requires the site to be located close to a main road. Specifically, the site is required to be within 10m of a road where high levels of traffic pollution (NO_2 and PM_{10}) are either modelled or are already measured. The site must not be located within 25m of a junction and the location must be representative of 100m of road length. Bureau Veritas installed a fixed roadside CAQMS (C8) as outlined above approximately 2.5 metres from Anglesea Road kerb in a non-residential urban area (Roadside CAQMS). The nearest buildings are some distance and are either Portsmouth University buildings or HM Naval administrative buildings. This station was established since the beginning of 2018 to monitor road related NO_2 and PM_{10}. This is considered as Defra's CAQMS.

- CAQMS C9 (**Map 7, Appendix D**): This CAQMS is located south of AQMA11 approximately 2 metres from Alfred Road kerb in an urban area (Roadside CAQMS). Buildings in the immediate vicinity are of occupational nature (Church and the naval base). It is a fixed roadside CAQMS established since the end of 2021 to monitor road related NO_2 PM_{10} and $PM_{2.5}$ along Alfred Road as one of the main links in and out of the city linked to the southern end of the M275 into the City.

3.2.2 Non-Automatic Monitoring

PCC undertook non- automatic (i.e., passive) monitoring of NO_2 at 228 sites during 2023 (excluding the six co-located DT). **Table A.2** in **Appendix A** presents the details of the non-automatic sites.

Maps showing the locations of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g., annualisation and/or distance correction), are included in **Appendix C**.

PCC revised its non-automatic (passive) monitoring of NO_2 network, NDDT network, to maintain the 288 sites in 2023 (excluding the 6 co-locations sites).

This monitoring network expansion was initiated as a result of Defra's commentary on PCC's 2017 ASR and was expanded as follows (Appendix A shows the details of the sites):

- **Yellow** highlighted sites (27 sites excluding co-locations): Ongoing monitoring sites for many years.
- **Blue** highlighted sites (74 sites): The additional monitoring sites in the period 2017-2018.
- **Green** highlighted sites (38 sites): The additional monitoring sites since the beginning of year 2019 as results of Defra's commentary on PCC 2017 ASR report.
- **Red** highlighted sites (15 sites): Additional monitoring sites during the year 2020.
- **Orange** highlighted sites (74 sites): Additional monitoring sites during the year 2021 to enforce CAZ monitoring.
- **Black** highlighted sites (6 sites): CAQMs as co-location sites.

Maps (From Map 8 to Map 19) showing the NDDT locations of the monitoring sites and their proximity to AQMAs are provided in **Appendix D** as follows:

Due to the large number of monitoring locations and their respective spread across the city, maps showing PCC's NDDT monitoring network have been subdivided into various maps covering various zones in the city. These are numbered individually to allow clear identification of the site locations:

- Map 8: Portsmouth map showing the 10 Zones for NDDT monitoring site locations.

- Maps 9 to Map 19: individual "zoomed in" area maps.

3.3 Local Air Quality Monitoring Results

3.3.1 Nitrogen Dioxide (NO_2)

3.3.1.1 Nitrogen Dioxide Diffusion Tube data sets (2019-2023)

The NO_2 real-time continuous monitoring program (CAQMS network) is supplemented by a non-automatic passive monitoring survey using an extensive NDDT network. **These sites are located mainly near busy junctions at kerbside and roadside locations at relevant exposure locations as defined in Box 1.1 of the LAQM.TG(16) guidance**.

This monitoring program is no longer focusing on declared / revoked AQMAs but has been expanded as outlined above to:

- include locations within the 2 exceedance road links as identified by Defra's PCM model for Portsmouth and monitoring sites in road links of similar criteria across Portsmouth, to cover the ministerial direction for the road links to validate compliance in respect of the AAQD 2008/50/EC[9].
- allow for an effective assessment of the introduction of the CAZ since November 29th, 2021.

In this section **Table A.3** and **Table A.4** in **Appendix A** compare the ratified and adjusted monitored NO_2 Annual Mean concentrations for the past 5 years with the NO_2 Annual Mean NAQO (40µg/m^3) at the CAQMS and NDDT locations respectively. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required.

For NDDTs, the full most recent year of data (2023) of monthly mean values is provided in **Appendix B**. Note that the concentration data presented in **Table B.1** includes distance corrected values, and annualisation where relevant.

Also, in **Appendix A**, a comparison of the ratified continuous monitored NO_2 1-hour Mean for the past 5 years (2019-2023) with the NO_2 1-hour Mean NAQO of 200µg/m^3, not to be exceeded more than 18 times per year.

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[9] EUR-Lex - 32008L0050 - EN - EUR-Lex (europa.eu)

The NDDT survey locations and monitoring site characteristics are summarised in **Table A.3**, and **Table A.3 Appendix A** and illustrated in Maps 8-19, **Appendix D**.

The NDDT survey has been conducted in accordance with the QA / QC outlined in **Appendix C.**

3.3.1.1.1 Nitrogen Dioxide Diffusion Tube data adjustment methods

In line with Defra's guidance the 2023 NDDT survey data was subjected up to 3 stage adjustments to be directly compared to the NO_2 Annual Mean NAQO. These correction stages are illustrated in the three sections that follow:

- **First stage correction (Data annualisation)**

In this section **Table A.3** in **Appendix C** presents Annualisation summary for the required monitoring locations.

According to **Box 7.10 of LAQM.TG (16)**, data generated from NDDT survey was firstly annualised where monitoring had been carried out for a period greater or equal to 3 months (Data Capture (DC) less than 25%) and fewer than 9 months (Data Capture (DC) less than 75%).

In 2023 three NDDT monitoring location had data capture less than 75%. These are:

- Site 16: Parade Court, London Road (LR-PC, DC (50%)).
- Site 96: Mary Rose Centre Albert Road (AR-MRC, DC (58.33%)).
- Site 131: 16 London Road on Chichester Road (CR-PP, DC (58.33%)).

To carry the annualisation of the three above listed locations, annualisation factors were calculated according to **Box 7.9 and Box 7.10 of LAQM.TG (16)** prescribed methodology using continuous monitoring data from the following CAQMSs whose data captures in 2023 were in excess of 85%:

- Burrfields Road, CAQMS (Roadside)
- Mile End Road, CAQMS (Roadside)
- Gatcombe, Curtis Mead, AURN CAQMS (Background)

- Anglesea Road, DEFRA CAQMS (Roadside)

The annualisation on individual sites was carried out as follows:

- **Annualisation of Site 16: Parade Court, London Road (LR-PC, DC (50%)):**

		C6 Burrfields Road	C7 Mile End Road	C4 Curtis Mead (AURN)	C8 Anglesea Road (DEFRA)
(**DC %**) Data Capture		99.73%	99.73%	99.73%	100.00%
Am (Annual Mean)		23.47	25.14	15.06	26.00
Pm (DT period Mean)		13.92	25.46	19.08	26.38
Annualisation Factor: Port **Rb** (ratio Am/Pm)		1.69	0.99	0.79	0.99
Annualisation Factor Average "**Ra**"	**1.11**				
DT **Pm**	**23.94**				
Annualised average" **D1"**	**26.62**				

- **Annualisation of Site 96: Mary Rose Centre Albert Road (AR-MRC, DC (58.33%).**

		C6 Burrfields Road	C7 Mile End Road	C4 Curtis Mead (AURN)	C8 Anglesea Road (DEFRA)
(**DC %**) Data Capture		99.73%	99.73%	99.73%	100.00%
Am (Annual Mean)		23.47	25.14	15.06	26.00
Pm (DT period Mean)		13.30	23.14	18.93	25.01
Annualisation Factor: Port **Rb** (ratio Am/Pm)		1.76	1.09	0.80	1.04
Annualisation Factor Average "**Ra**"	**1.17**				
DT **Pm**	**21.13**				
Annualised average" **D1"**	**24.75**				

- **Annualisation of Site 131: 16 London Road on Chichester Road (CR-PP, DC (58.33%).**

		C6 Burrfields Road	C7 Mile End Road	C4 Curtis Mead (AURN)	C8 Anglesea Road (DEFRA)
(**DC %**) Data Capture		99.73%	99.73%	99.73%	100.00%

Am (Annual Mean)		23.47	25.14	15.06	26.00
Pm (DT period Mean)		14.67	26.92	19.73	26.38
Annualisation Factor: Port **Rb** (ratio Am/Pm)		1.60	0.93	0.76	0.99
Annualisation Factor Average "**Ra**"	**1.07**				
DT **Pm**	**34.17**				
Annualised average" **D1"**	**36.58**				

A summary of the annualization of the three NDDT monitoring locations is tabulated in Appendix. C, **Table A.2.**

- **Second stage correction (Bias Adjustment Factor (BAF) applied to all NDDT data)**

Bias Adjustment Factors were generated from local co-location study involving the exposure of a triplicate NDDTs at the 5 long-term continuous monitoring stations in the city (Gatcombe Park (AURN), London Road, Burrfields Road, Mile End Road and Anglesea Road (Defra)), following the approach prescribed within **LAQM.TG (16).** Using Defra's calculating precision and accuracy spreadsheet.

For consistency purposes, in 2023 PCC used the Bias Adjustment Factors generated from locations like those used in year 2022 that resulted to 0.875. These were:

- Burrfields Road CAQMS location (0.82).
- Mile End Road CAQMS Location (0.88).
- Anglsea Road -Defra's CAQMS location (0.96).

The above Bias Adjustment Factors were averaged using the methodology prescribed in the LAQM.TG as follows.

A summary of the Local Bias Adjustment Factor Calculation is presented in **Table A.3** in **Appendix C**.

The 2023 NDDT survey results have consequently been bias adjusted using 0.885. This was slightly higher than that of 2022 that was 0.875 as illustrated in **Table A.3** in **Appendix C**.

PCC acquires NDDT from Gradko of 50%TEA in Acetone grade. In 2023 fifteen co-location studies took place in the UK using similar NDDT that resulted in an array of Bias Adjustment Factors (BAF) as tabulated below.

The lowest (0.68) and the highest (0.99) BAFs were recorded at Redcar, Cleveland Borough Council, and the Royal Borough of Windsor and Maidenhead respectively.

However, it is recommended by Defra to use 0.82 as BAF nationwide in the absence of a locally produced BAF.

In Portsmouth a BAF (0.885) was generated which is higher than the national BAF that once applied, it generates data slightly higher than if we would apply the National BAF (0.83) by 6.63%.

Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (mg/m^3)	Automatic Monitor Mean Conc. (Cm) (mg/m^3)	Bias (B)	Tube Precision [6]	Bias Adjustment Factor (A) (Cm/Dm)
City Of London Corporation	10	28	22	26.3 %	G	**0.79**
City Of London Corporation	11	36	31	15.0 %	G	**0.87**
LB Newham	12	27	21	28.0 %	G	**0.78**
Redcar And Cleveland Borough Council	12	14	10	48.0 %	G	**0.68**
Sandwell Mbc	12	33	26	27.6 %	G	**0.78**
Sandwell Mbc	11	21	18	15.8 %	G	**0.86**

Sandwell Mbc	12	23	20	14.2 %	S	**0.88**
Falkirk Council	12	33	29	14.9 %	G	**0.87**
Falkirk Council	12	15	13	8.9%	G	**0.92**
London Borough Of Lewisham	11	33	27	22.7 %	G	**0.82**
London Borough Of Merton	12	37	31	18.5 %	G	**0.84**
Marylebone Road intercomparison	11	47	38	25.7 %	G	**0.80**
Royal Borough Of Windsor And Maidenhead	11	27	23	21.6 %	G	**0.82**
Royal Borough Of Windsor And Maidenhead	12	24	24	0.6%	G	**0.99**
London Borough Of Richmond Upon Thames	11	18	16	15.6 %	G	**0.86**
Overall Factor[3] (16 studies)				**Use**		**0.83**

- **Third stage correction (Level correction to the nearest relevant exposure)**

Where a NNDT is located at some distance from the receptor, a distance correction is deployed to predict the level of the pollutant at the façade of the sensitive premises. This has been carried out using the calculator made available via 'Air Quality Consultants'. This tool is provided to LA to predict the NO_2 Annual Mean concentration for a receptor location that is close to a monitoring site, but nearer or further to the kerb than the monitor.

NDDT results as tabulated in Table A.4 are exclusive of any consideration to fall-off with distance adjustment except for two locations (**Table A.3** in Appendix C):

- The two locations continued to be distance corrected as historical locations:
    - 106 Victoria Road North (Site 23).
    - Anchorage Road, Column 6 (Site11).
- The rest of the locations were not distance corrected given that we had neither high levels (at least in excess of 37µg/m^3) with immediate relevant exposure in the vicinity, nor exceedance of NO_2 Annual Mean NAQO at any of the monitored

locations that warrant distance correction. In addition, corrected levels results only to lower levels.

3.3.1.1.2 Nitrogen Dioxide Diffusion Tube data sets results (2019-2023)

In this section the ratified and adjusted monitored NO_2 Annual Mean concentrations for the past 5 years are compared with the NAQO of 40µg/m^3 and a summary of which is presented below for individual years comencing by year 2019.

In 2023, PCC continued to monitor NO2 through the ongoing NDDT survey to cover 228 locations cross the city (excluding the six co-located locations).

In **Table A.4 in Appendix A**: Monitoring Results compares the ratified and adjusted monitored NO2 Annual Mean for the past 5 years, with the NO2 Annual Mean NAQO (40µg/m3).

In terms of **"long-term"** and for the purpose of a slight **"in depth assessment"**, we can subdivide the number of monitored locations depending on the historical monitoring duration as follows:

A. Locations with monitoring duration is at least 5-year (2019-2023):

This category covers 140 locations where NDDT monitoring was carried out for a duration of at least 5 year (2019-2023). This category is also subdivided into two parts (a) and (b):

a. This category covers the first ever 27 historical NDDT Monitoring locations where NO_2 monitoring was carried out in the last 5 year:
    i. No breach of the NO_2 Annual Mean NAQO in 2023.
    ii. In the short-term, NO_2 Annual Mean decreased between 2022 and 2023 at 23 locations (85.19%) and decreased at 4 locations (14.81%). Hence, **LAQ improved at the 27 historical locations in the short-term**.
    iii. In the Long-term, NO_2 Annual Mean trend for the last 5 years (2019-2023) exhibited "Downward" trend at 26 locations (96.30%) and only one location exhibited "Upward" trend. **Hence, LA improved at the 27 historical locations in the long-term**.

Total NDDT	27	%ages
Down (Beneficial)	23	85.19%
Up (Adverse)	4	14.81%
Downward	26	96.30%
Upward	1	3.70%

b. This category covers 113 NDDT Monitoring locations where NO_2 monitoring was carried out in the last 5 year (Excluding the 27 historical locations):
   i. The NO_2 Annual Mean was in excess of the NO_2 Annual Mean NAQO at three locations (Site117, 118 and 145) in 2023.
   ii. In the short-term, NO_2 Annual Mean decreased between 2022 and 2023 at 88 locations (77.88%) and increased at the 25 remaining locations (22.12%). Hence, **LAQ improved at the 27 historical locations in the short-term.**
   iii. In the long-term, NO_2 Annual Mean trend for the last 5 years (2019-2023) exhibited downward trend at 96 locations (84.96%) and an upward trend at 17 locations (15.04%). Hence, **LAQ improved at the 27 historical locations in the long-term.**

Total NDDT	113	%ages
Down	88	77.88%
Up	25	22.12%
Downward	96	84.96%
Upward	17	15.04%

c. This category covers the combined above 140 NDDT Monitoring locations where NO_2 monitoring was carried out in the last 5 year:

- The 2023 NO_2 Annual Mean levels were in excess of the NO_2 Annual Mean NAQO at three locations (Site 117, 18, and 145) along the road links, as identified by PCM model for Portsmouth, just outside the existing AQMA 11:
    - Alfred Road, south / west of AQMA11:
        - **Alfred Road, Column 9, Site-117 (AR-Col9), 42.79 µg/m³ (Appendix F, Figure 28)**
            - The NO_2 Annual Mean at this roadside monitoring location decreased by 5.75 µg/m³ (a decrease of 11.85%) between 2022 and 2023 and remained above the NO_2 Annual Mean NAQO in 2023 (42.79 µg/m³). This represents a LAQ beneficial change. Hence, **LAQ improvement in the short-term**.
            - In addition, The NO_2 Annual Mean exhibited a "Downward" trend in the last 5 years (2019-2023). Hence, **LAQ improved in the long-term**.
            - However, in the lack of relevant exposure in the vicinity, this does not constitute a beach of NO_2 Annual Mean NAQO. Hence no NAQO annual exceedance.
        - **Alfred Road, Column 12, Site-118 (AR-Col12), 43.72 µg/m³ (Appendix F, Figure 29)**
            - The NO_2 Annual Mean at this roadside monitoring location decreased by 2.18 µg/m³ (a decrease of 4.76%) between 2022 and 2023 and remained in excess of the NO_2 Annual Mean NAQO in 2023 (43.72 µg/m³). This represents a LAQ

beneficial change. Hence, **LAQ improvement in the short-term**.

  - In addition, the NO_2 Annual Mean exhibited a "Downward" trend in the last 5 years (2019-2023). **Hence, LAQ improved in the long-term**.

  - However, in the lack of relevant exposure in the vicinity, this does not constitute a beach of NO_2 Annual Mean NAQO.

- **Hope Street, Opposite column 4, Site-145, (HS O-Col4), 42.51 µg/m³ (Appendix F, Figure 30):**

  - The NO_2 Annual Mean at this roadside monitoring location decreased by 5.96 µg/m³ (a decrease of 12.30%) between 2022 and 2023 and remained above the NO_2 Annual Mean NAQO in 2023 (42.51 µg/m³). This represents a LAQ beneficial change. Hence, **LAQ improved in the short-term**.

  - In addition, the NO_2 Annual Mean exhibited a "Downward" trend in the last 5 years (2019-2023). Hence, **LAQ improved in the long-term**.

  - However, in the lack of relevant exposure in the vicinity, this does not constitute a beach of NO_2 Annual Mean NAQO.

- In addition, the NO_2 Annual Mean dropped below the annual average NAQO at two further two locations in 2023:

  - Market Way south / west of AQMA11 on Market Way that is an extension of Alfred Road to the East:

    - **120: Market Way,** 35.73 µg/m³ **(MW-OppStABS):** The annual mean was **44.88 µg/m³** in 2022 to drop in 2023 to 35.73 µg/m³.

- **213: Kingston Road,** 38.53 µg/m^3 **(KR-Col4):** The 2022 NO_2 Annual Mean increased from 2021 to 2022 to reach 40 µg/m^3. This site is located in AQMA6**.** However, in 2023 the annual mean decreased to drop to 38.53 µg/m^3.

- In the short term, NO_2 Annual Mean increased between 2022 and 2023 at 29 locations (20.71%) and decreased at the remaining 111 locations (79.29%). **Hence improvement of LAQ in the short-term.**
- In the long-term, NO_2 Annual Mean trend for the last 5 years (2019-2023) exhibited "Upward" trend at 18 locations (12.86%), and "Downward" trend at the remaining 112 locations (87.14%). **Hence improvement of LAQ in the long-term.**

Total NDDT	140	%ages
Down	111	79.29%
Up	29	20.71%
Downward	112	87.14%
Upward	18	12.86%

B. Locations with the last four-year monitoring period (2020-2023):

This category covers 16 NDDT Monitoring locations where NO_2 monitoring was carried out in the last four year only within the last 5 years up to 2023:

- No NO_2 Annual Mean exceedance of the NO_2 Annual Mean.
- In the short-term, the NO_2 Annual Mean increased from 2022 to 2023 at 2 locations (12.50%) and decreased at the remaining 14 (87.50%). Hence, **an improvement in LAQ in the short-term**.

- In the long-term, the NO_2 Annual Mean trend for the last 5 years (2019-2023) exhibited "Downward" trend at 8 locations (50%), and an "Upward" trend at the remaining 8 locations (50%).

Total NDDT	16	%ages
Down	14	87.5%
Up	2	12.50%
Downward	8	50%
Upward	8	50%

C. Locations with the last three-year monitoring period (2020-2023):

This category covers 72 NDDT Monitoring locations where NO_2 monitoring was carried out in the last three years only within the last 5 years up to 2023:

- No NO_2 Annual Mean exceedance of the NO_2 Annual Mean.
- In the short-term, NO_2 Annual Mean increased between 2022 and 2023 at 15 locations (20.83%) and decreased at the remaining 57 locations (79.17%). Hence, **an improvement in LAQ in the short-term**.
- In the long-term, NO_2 Annual Mean trend for the last 5 years (2019-2023) exhibited an "Upward" trend at 11 locations (15.28%), and a "Downward" trend at the remaining 61 locations (84.72%). Hence, **an improvement in LAQ in the long-term.**

Total NDDT	72	%ages
Down	57	79.17%
Up	15	20.83%

Downward	61	84.72%
Upward	11	15.28%

D. Assessment of all the three above categories of NDDT Locations combined up to 2023:

This category covers 228 NDDT Monitoring locations where NO_2 monitoring was carried out in the last 5 year:

a) No NO_2 Annual Mean exceedance of the NO_2 Annual Mean. However, NO_2 Annual Mean was in excess of the NO_2 Annual Mean NAQO at three locations (Site 117, 118, and 145).
b) The 2023 NO_2 Annual Mean levels were in excess of the NO_2 Annual Mean NAQO at the same locations as those in 2022 (Alfred Road and Hope Street). However, no breach of the NAQO in the lack of relevant exposure.
c) In the short-term, NO_2 Annual Mean increased between 2022 and 2023 at 46 locations (20.18%) and, decreased at the remaining 182 locations (79.82%). Hence, **an improvement in LAQ in the short-term**.
d) NO_2 Annual Mean trend for the last 5 years (2019-2023) exhibited "Downward" trend at 191 locations (83.77%), an "Upward" trend at the remaining 37 locations (16.23%). Hence, **an improvement in LAQ in the long-term**.

Total NDDT	228	%ages
Down	182	79.82%
Up	46	20.18%
Downward	191	83.77%
Upward	37	16.23%

A further assessment of NDDT results within and immediately in the vicinity of the existing of Portsmouth 5 AQMAs was conducted in depth as per the two tables below:

- This table lists the number of monitoring locations **within the AQMAs** with their subsequent status in the short-term and long-term:

AQMA	Number of Monitoring Locations	Monitoring Location Number with Adverse Effect (Short-term)	Monitoring Location Number with Beneficial Effect (Short-term)	Monitoring Location Number with Upward Trend (2019-2023) (Long-term)	Monitoring Location Number with Downward Trend (2019-2023) (Long-term)
6	18	2	16	2	16
7	3		3		3
9	13	2	11		13
11	7		7		7
12	7	1	6		7

- This table lists the number of monitoring locations in the **vicinity the AQMAs** (outside AQMAs) with their subsequent status in the short-term and long-term:

AQMA	Number of Monitoring Locations	Monitoring Location Number with Adverse Effect (Short-term)	Monitoring Location Number with Beneficial Effect (Short-term)	Monitoring Location Number with Upward Trend (2019-2023) (Long-term)	Monitoring Location Number with Downward Trend (2019-2023) (Long-term)
6	22	8	14	4	18
7	4		4	1	3
9	7	1	6	2	5
11	30	5	25	6	24

- **AQMA 6**: LAQ improved within and in the vicinity of AQMA 6 in both, short term (between 2022 and 2023) and long-term (2019-2023):
    - There are 18 NDDT monitoring locations within AQMA 6:
        - In the short-term, there are 16 monitoring locations (16/18) that exhibited "Beneficial" effect on LAQ while the other 2 (2/18), exhibited "Adverse" effect between 2022 and 2023. Hence, **improvement in LAQ in the short-term within AQMA6**.
        - In the long-term, there are 16 (16/18) monitoring locations that exhibited a "Downward" trend of the NO_2 Annual Mean in the last 5 years, while the other 2 (2/18) locations exhibited an "Upward" trend (2019-2023). Hence**,** **improvement in LAQ in the long-term within AQMA6**.
    - There are 22 NDDT monitoring locations just outside AQMA 6:
        - In the short-term, there are 14 monitoring location (14/22) that exhibited "Beneficial" effect on LAQ while the other 8 (8/22) exhibited "Adverse" effect between 2022 and 2023. Hence**,** **improvement in LAQ in the short-term within AQMA6**.
        - In the long-term, there are 18 monitoring location (18/22) that exhibited "Downward" trend of the NO_2 Annual Mean in the last 5 years, while the other 4 (4/22) locations exhibited an "Upward" trend (2019-2023). Hence, **improvement in LAQ in the long-term within AQMA6**.

- **AQMA 7**: LAQ improved within and in the vicinity of AQMA 7 in both, short term (between 2022 and 2023) and long-term (2019-2023).
    - There are 3 NDDT monitoring locations within AQMA 7:
        - In the short-term, there are 3 (3/3) exhibited "Beneficial" effects between 2022 and 2023. Hence, **improvement in LAQ in the short-term within AQMA7**.
        - In the long-term, there are 3 (3/3) monitoring location that exhibited a "Downward" trend of the NO_2 Annual Mean in the last 5 years (2019-2023). **improvement in LAQ in the long-term within AQMA7**.
    - There are 4 NDDT monitoring locations just outside AQMA 7:

- In the short-term, there are 4 monitoring location (4/4) that exhibited a "Beneficial" effect. Hence, **improvement in LAQ in the short-term within AQMA7.**
- In the long-term, there are 3 (3/4) monitoring locations that exhibited "Downward" trend of the NO_2 Annual Mean in the last 5 years (2019-2023). Hence, **improvement in LAQ in the long-term within AQMA7.**

- **AQMA 9**: LAQ improved within and in the vicinity of AQMA 9 in both, short term (between 2022 and 2023) and long-term (2019-2023).
  - There are 13 NDDT monitoring locations within AQMA 9:
    - In the short-term, there are 11 monitoring locations (11/13) that exhibited a "Beneficial" effect on LAQ while the other 2 (2/13) exhibited "Adverse" effect between 2022 and 2023. Hence, **improvement in LAQ in the short-term within AQMA9**.
    - In the long-term, there are 13 monitoring locations (13/13) that exhibited a "Downward" trend of the NO_2 Annual Mean in the last 5 years. Hence, **improvement in LAQ in the long-term within AQMA9**.
  - There are 7 NDDT monitoring locations just outside AQMA 9:
    - In the short-term, there are 6 monitoring locations that exhibited a "Beneficial" (6/7) effect on LAQ while the other 1 (1/7) exhibited "Adverse" effect between 2022 and 2023. Hence, **improvement in LAQ in the short-term within AQMA9.**
    - In the long-term, there are 5 monitoring locations (5/7) that exhibited a "Downward" trend of the NO_2 Annual Mean in the last 5 years, while the other 2 location (2/7) exhibited an "Upward" in the last 5 years (2019-2023). Hence, **improvement in LAQ in the long-term within AQMA9**.
- **AQMA 11**: LAQ improved within and in the vicinity of AQMA 11 in both, short term (between 2022 and 2023) and long-term (2019-2023).
  - There are 7 NDDT monitoring locations within AQMA 11:
    - In the short-term, there are 7 monitoring locations (7/7) that exhibited a "Beneficial" effect between 2022 and 2023. Hence, **improvement in LAQ in the short-term within AQMA11.**

  - In the long-term, there are 7 monitoring locations (7) that exhibited a "Downward" trend of the NO_2 Annual Mean in the last 5 years. Hence, **improvement in LAQ in the long-term within AQMA11**.
- There are 30 NDDT monitoring locations just outside AQMA 11:
  - In the short-term, there are 25 monitoring locations (25/30) that exhibited a "Beneficial" effect on LAQ while the other 5 (5/30) exhibited "Upward" effect between 2022 and 2023. Hence, **improvement in LAQ in the short-term within AQMA11**.
  - In the long-term, there are 24 monitoring locations (24/30) that exhibited a "Downward" trend of the NO_2 Annual Mean in the last 5 years, while the other 6 (6/21) locations exhibited an "Upward' trend. Hence, **improvement in LAQ in the long-term within AQMA11**.

- **AQMA 12**: LAQ improved within AQMA 11 in both, short term (between 2022 and 2023) and long-term (2019-2023).
  - There are 7 NDDT monitoring locations within AQMA 12:
    - In the short-term, there are 6 monitoring locations (6/7) that exhibited a "Beneficial" effect on LAQ while the other 5 (5/7) exhibited an "Adverse" effect between 2022 and 2023. **Hence, improvement in LAQ in the short-term within AQMA12.**
    - In the long-term, there are 7 monitoring locations (7/7) that exhibited "Downward" trend of the NO_2 Annual Mean in the last 5 years. Hence**, improvement in LAQ in the long-term within AQMA12**.

The above assessment is summarised in the following table.

AQMA	Short term Effect Within AQMA	Short-term Effect Outside AQMA	Long-term Effect Within AQMA	Long-term Effect Outside AQMA
6	**Improvement**	**Improvement**	**Improvement**	**Improvement**
7	**Improvement**	**Improvement**	**Improvement**	**Improvement**
9	**Improvement**	**Improvement**	**Improvement**	**Improvement**
11	**Improvement**	**Improvement**	**Improvement**	**Improvement**
12	**Improvement**		**Improvement**	

Based on the assessment carried out above, it can be concluded that LAQ improved in the short-term and in the long-term within and in the vicinity of the existing AQMAs in Portsmouth.

A further summary on the NO_2 Annual Mean NDDT based monitoring results are tabulated bellow with their respective LAQ status for at all 228 NDDT monitoring locations continues:

Diffusion Tube ID	Location	Annual Mean in *μg/m³*	Short-term	5 Year Trend (2019-2023)	LAQ Status
1	Lord Montgomery Way	31.19	Beneficial	Downward	No Exceedance of NAQO
2	12 Chadderton Gardens, Portsmouth PO1 2TE, Southsea	13.72	Beneficial	Downward	No Exceedance of NAQO
3	121A High St, Portsmouth PO1 2HW	18.73	Beneficial	Downward	No Exceedance of NAQO
4	Queen Street, Column 30	25.90	Beneficial	Downward	No Exceedance of NAQO
5	119 Whale Island Way, Portsmouth PO2 8EW	21.19	Beneficial	Downward	No Exceedance of NAQO
6	88 Stanley Rd, Portsmouth PO2 8EN	25.12	Beneficial	Downward	No Exceedance of NAQO
7	138 Lower Derby Rd, Portsmouth PO2 8EY	21.65	Beneficial	Downward	No Exceedance of NAQO
8	492 Hawthorn Cres, Cosham, Portsmouth PO6 2TX	21.10	**Adverse**	Downward	No Exceedance of NAQO
9	6 Northern Rd, Cosham, Portsmouth PO6 3TE	29.61	Beneficial	Downward	No Exceedance of NAQO
10	20 Stroudley Ave, Drayton, Portsmouth PO6 1RF	14.28	**Adverse**	Downward	No Exceedance of NAQO
11	Anchorage Road, Column 6	18.59	Beneficial	Downward	No Exceedance of NAQO
14	4 Merlin Dr, Hilsea, Portsmouth PO3 5QY	17.41	Beneficial	Downward	No Exceedance of NAQO
15	29 Milton Rd, Portsmouth PO3 6AN	21.58	Beneficial	Downward	No Exceedance of NAQO
16	Parade Court, London Road (LR-PC)	23.56	Beneficial	**Upward**	No Exceedance of NAQO
18	4 Milton Rd, Portsmouth PO4 8GU	22.73	**Adverse**	Downward	No Exceedance of NAQO

Diffusion Tube ID	Location	Annual Mean in $\mu g/m^3$	Short-term	5 Year Trend (2019-2023)	LAQ Status
19	7 Velder Avenue, Southsea, Portsmouth, Southsea PO4 8RT	27.92	Beneficial	Downward	No Exceedance of NAQO
20	136 Eastney Rd, Southsea, Portsmouth, Southsea PO4 8DY	21.64	Beneficial	Downward	No Exceedance of NAQO
21	118 Albert Rd, Southsea, Portsmouth, Southsea PO4 0JS	29.17	**Adverse**	Downward	No Exceedance of NAQO
22	2 Victoria Road North, Southsea, Portsmouth, Southsea PO5 1PX	21.40	Beneficial	Downward	No Exceedance of NAQO
23	106 Victoria Road North, Southsea, Portsmouth, Southsea PO5 1QE, Column19	26.37	Beneficial	Downward	No Exceedance of NAQO
24	221 Fratton Rd, Portsmouth PO1 5HA	28.46	Beneficial	Downward	No Exceedance of NAQO
25	117 Kingston Rd, Portsmouth PO2 7DZ	29.29	Beneficial	Downward	No Exceedance of NAQO
26	The Tap, 17 London Road, North End, Portsmouth PO2 0BQ	33.61	Beneficial	Downward	No Exceedance of NAQO
30	Market Tavern 472 Mile End Road, Portsmouth PO2 7BX	29.95	Beneficial	Downward	No Exceedance of NAQO
34	Sovereign Gate, Commercial Rd (ComR-UF)	25.97	Beneficial	Downward	No Exceedance of NAQO
35	12 Hampshire Terrace, Southsea, Portsmouth PO1 2QZ	22.99	Beneficial	Downward	No Exceedance of NAQO
36	103 Elm Grove, Southsea, Portsmouth, Southsea PO5 1LH	24.50	Beneficial	Downward	No Exceedance of NAQO
42	Kingston Crescent-Admiral Drake PH- (KC-ADPH)	28.47	Beneficial	Downward	No Exceedance of NAQO
43	84-88 Kingston Cres, North End, Portsmouth PO2 8AQ	28.26	Beneficial	Downward	No Exceedance of NAQO
44	4 Marketway, Portsmouth PO1 4BX	26.47	Beneficial	Downward	No Exceedance of NAQO
45	5 Marketway, Portsmouth PO1 4BX	29.00	Beneficial	Downward	No Exceedance of NAQO
46	Mile End Road, Column 5	29.68	Beneficial	Downward	No Exceedance of NAQO
47	3 Stamshaw Rd, Portsmouth PO2 8LG, West	28.27	Beneficial	Downward	No Exceedance of NAQO
48	28 Stamshaw Rd, North End, Portsmouth PO2 8LR East	25.09	Beneficial	Downward	No Exceedance of NAQO

Diffusion Tube ID	Location	Annual Mean in $\mu g/m^3$	Short-term	5 Year Trend (2019-2023)	LAQ Status
49	Half Moon Street-The Ship and Castle (PH) (on 40 Queen St, Portsea, Portsmouth PO1 3HN)	23.97	Beneficial	Downward	No Exceedance of NAQO
50	47 Queen St, Portsea, Portsmouth PO1 3HW	29.87	**Adverse**	Downward	No Exceedance of NAQO
51	57 Queen St, Portsea, Portsmouth PO1 3HY	25.08	Beneficial	Downward	No Exceedance of NAQO
52	Queen Street, Column 29	24.48	Beneficial	Downward	No Exceedance of NAQO
55	Gunwharf Road, Column 12 (12 King Charles St, Portsmouth PO1 2RR)	22.20	Beneficial	Downward	No Exceedance of NAQO
56	Gunwharf Road, Column 4	27.85	Beneficial	**Upward**	No Exceedance of NAQO
58	9 St George's Rd, Portsmouth PO1 2EH	22.32	**Adverse**	Downward	No Exceedance of NAQO
59	Milton Road, Column 41	29.58	Beneficial	**Upward**	No Exceedance of NAQO
60	Milton Road, Column 42	21.31	**Adverse**	Downward	No Exceedance of NAQO
61	1/10 Southwick House Milton Road on the fence (MR- SH)	25.03	Beneficial	Downward	No Exceedance of NAQO
62	12 Hambrook House, Milton Road, Milton	14.65	Beneficial	Downward	No Exceedance of NAQO
63	209 Milton Rd, Southsea, Portsmouth, Southsea PO4 8PH	25.27	Beneficial	Downward	No Exceedance of NAQO
64	Summerson Lodge Milton Road (MR-SL)	27.73	Beneficial	Downward	No Exceedance of NAQO
65	12 Moorings Way, Southsea, Portsmouth, Southsea PO4 8QW	23.70	**Adverse**	Downward	No Exceedance of NAQO
66	1 Velder Avenue, Southsea, Portsmouth, Southsea PO4 8RT	25.16	**Adverse**	Downward	No Exceedance of NAQO
67	23 Velder Avenue, Southsea, Portsmouth, Southsea PO4 8RT	26.96	Beneficial	Downward	No Exceedance of NAQO

Diffusion Tube ID	Location	Annual Mean in *µg/m³*	Short-term	5 Year Trend (2019-2023)	LAQ Status
68	36 Velder Avenue, Southsea, Portsmouth, Southsea PO4 8RT	26.97	Beneficial	Downward	No Exceedance of NAQO
69	Velder Avenue, Column 4 (Cross from 7 Velder Avenue, Southsea, Portsmouth, Southsea PO4 8RT)	22.62	Beneficial	Downward	No Exceedance of NAQO
70	Milton Primary School, Eastney Rd, Southsea, Portsmouth PO4 8ET	19.59	Beneficial	Downward	No Exceedance of NAQO
71	19 Spur Rd, Cosham, Portsmouth PO6 3DY	23.14	**Adverse**	Downward	No Exceedance of NAQO
72	60-62 Northern Rd, Cosham, Portsmouth PO6 3DX	21.09	**Adverse**	Downward	No Exceedance of NAQO
73	52 Northern Rd, Cosham, Portsmouth PO6 3DP	21.19	**Adverse**	Downward	No Exceedance of NAQO
74	Northern Road, Column 38	26.30	**Adverse**	Downward	No Exceedance of NAQO
75	1-6 Chipstead Rd, Cosham, Portsmouth PO6 3JJ	19.13	Beneficial	Downward	No Exceedance of NAQO
76	142 Copnor Rd, Portsmouth PO3 5AP	24.31	Beneficial	Downward	No Exceedance of NAQO
77	154-146 Copnor Rd, Portsmouth PO3 5BZ (On the Playground)	19.36	Beneficial	**Upward**	No Exceedance of NAQO
78	3 Goldsmith Ave, Southsea, Portsmouth, Southsea PO4 8DT	20.01	**Adverse**	**Upward**	No Exceedance of NAQO
80	147 Albert Rd, Southsea, Portsmouth, Southsea PO4 0JW	28.37	Beneficial	Downward	No Exceedance of NAQO
81	Albert Road, Column 22 (Outside 130A Albert Rd, Southsea, PO4 0JS)	25.19	Beneficial	Downward	No Exceedance of NAQO
82	106-108 Albert Rd, Southsea, Portsmouth, Southsea PO5 2PL (On Waverley Road)	23.24	Beneficial	Downward	No Exceedance of NAQO
83	141 Albert Rd, Southsea, Portsmouth PO5 2SQ	25.62	Beneficial	**Upward**	No Exceedance of NAQO
84	145 Albert Rd, Southsea, Portsmouth, Southsea PO4 0JW (On Lawrence Road)	26.83	Beneficial	**Upward**	No Exceedance of NAQO
85	98 Albert Rd, Southsea, Portsmouth, Southsea PO5 2SN	28.04	Beneficial	Downward	No Exceedance of NAQO
86	91 Fawcett Rd, Southsea, Portsmouth, Southsea PO4 0DB (FR-91)	21.94	Beneficial	Downward	No Exceedance of NAQO

Diffusion Tube ID	Location	Annual Mean in $\mu g/m^3$	Short-term	5 Year Trend (2019-2023)	LAQ Status
87	Priory School, Fawcett Rd, Southsea, Portsmouth, Southsea PO4 0DL	21.18	Beneficial	Downward	No Exceedance of NAQO
88	1-8 Lawrence Rd, Southsea, Portsmouth, Southsea PO5 1PJ	27.35	Beneficial	Downward	No Exceedance of NAQO
89	110A Albert Road (On Waverley Road)	23.83	Beneficial	**Upward**	No Exceedance of NAQO
90	18 Baffins Rd, Portsmouth PO3 6BG	18.80	Beneficial	Downward	No Exceedance of NAQO
91	3 Baffins Rd, Portsmouth PO3 6BD	20.92	Beneficial	Downward	No Exceedance of NAQO
92	13 Locksway Rd, Southsea, Portsmouth, Southsea PO4 8JN	20.75	Beneficial	Downward	No Exceedance of NAQO
93	40 Victoria Road North, Southsea, Portsmouth, PO5 1PX (Back of nursery)	25.07	Beneficial	Downward	No Exceedance of NAQO
96	Mary Rose Centre, Albert Road	21.91	**Adverse**	**Upward**	No Exceedance of NAQO
97	29 Rowan Ct, Southsea, Portsmouth, Southsea PO4 8UX	18.78	Beneficial	Downward	No Exceedance of NAQO
98	13-29 Eastern Road (Outside 13-29 Eastern Rd, Portsmouth PO3 6EN)	17.56	Beneficial	**Upward**	No Exceedance of NAQO
99	64-80 Eastern Road (64 Eastern Rd, Southsea, Portsmouth PO3 6EW)	18.35	Beneficial	Downward	No Exceedance of NAQO
100	340 Havant Road, Farlington, Portsmouth PO6 1PQ	17.71	Beneficial	Downward	No Exceedance of NAQO
101	Havant Road, 239 Havant Rd, Drayton, Portsmouth PO6 1DA, Column 52 (239 Havant Rd, Drayton, Portsmouth PO6 1DA)	22.77	**Adverse**	Downward	No Exceedance of NAQO
102	Hillside & Wymering Centre, Cheltenham Rd, Portsmouth PO6 3PY9On Southampton Rd)	21.05	Beneficial	Downward	No Exceedance of NAQO
103	UTC London Road, Hilsea, Portsmouth PO2 9DU	17.58	Beneficial	Downward	No Exceedance of NAQO
108	137, London Road	29.15	Beneficial	Downward	No Exceedance of NAQO
109	122-124 London Road, Hilsea, Portsmouth PO2 9DD	25.18	Beneficial	Downward	No Exceedance of NAQO

Diffusion Tube ID	Location	Annual Mean in $\mu g/m^3$	Short-term	5 Year Trend (2019-2023)	LAQ Status
110	2a, 2B Gladys Ave, North End, Portsmouth PO2 9BE	22.78	Beneficial	**Upward**	No Exceedance of NAQO
111	Gladys Avenue, Column 3 (Cross from 2a, 2B Gladys Ave, North End, Portsmouth PO2 9BE)	20.38	Beneficial	Downward	No Exceedance of NAQO
117	Alfred Road, Column 9	42.79	Beneficial	Downward	Possible exceedance of NAQO
118	Alfred Road, Column 12	43.72	Beneficial	Downward	Possible exceedance of NAQO
119	St Agatha's Bus Stop, Market Way	28.02	**Adverse**	Downward	No Exceedance of NAQO
120	Market Way, Cross from (MW-OppStABS)	35.73	Beneficial	Downward	No Exceedance of NAQO
121	46 London Road, North End, Portsmouth PO2 0BH	33.87	Beneficial	Downward	No Exceedance of NAQO
122	47 London Road, North End, Portsmouth PO2 0BH	31.20	Beneficial	Downward	No Exceedance of NAQO
124	Hillsley Road, Column 23 (Outside St Lucia House, Hillsley Rd, Portsmouth PO6 4LH)	25.44	**Adverse**	Downward	No Exceedance of NAQO
125	7 Tudor Cres, Cosham, Portsmouth PO6 2SR	25.44	Beneficial	Downward	No Exceedance of NAQO
126	Port Way, Column 32	26.81	Beneficial	Downward	No Exceedance of NAQO
127	133 Southampton Road (SR-133)	25.03	Beneficial	Downward	No Exceedance of NAQO
128	47 Derby Rd, North End, Portsmouth PO2 8HW	20.76	Beneficial	Downward	No Exceedance of NAQO
129	50A Derby Rd, North End, Portsmouth PO2 8HR	22.65	**Adverse**	**Upward**	No Exceedance of NAQO
130	120 London Road, North End, Portsmouth PO2 0NB (On Stubbington Avenue Bus Stop)	29.02	**Adverse**	Downward	No Exceedance of NAQO
131	16 London Road, North End, Portsmouth PO2 0LH (On Chichester Road)	32.37	**Adverse**	Downward	No Exceedance of NAQO
132	Milton Road, Column 50	30.75	Beneficial	Downward	No Exceedance of NAQO
133	Holbrook Road (Unity Hall, Coburg St, Portsmouth PO1 1JA)	23.72	Beneficial	Downward	No Exceedance of NAQO

Diffusion Tube ID	Location	Annual Mean in $\mu g/m^3$	Short-term	5 Year Trend (2019-2023)	LAQ Status
135	Southampton Road, North	24.15	Beneficial	**Upward**	No Exceedance of NAQO
136	Southampton Road - South (SR-S)	27.90	**Adverse**	**Upward**	No Exceedance of NAQO
137	Southampton Road, Column 96	35.21	Beneficial	**Upward**	No Exceedance of NAQO
138	Southampton Road, Column 97	24.83	Beneficial	Downward	No Exceedance of NAQO
139	Southampton Road, Column 79	29.05	Beneficial	Downward	No Exceedance of NAQO
143	8 Old London Road, Hilsea, Portsmouth PO2 9RS	25.91	Beneficial	Downward	No Exceedance of NAQO
144	Old London Road, Column 3	29.65	Beneficial	Downward	No Exceedance of NAQO
145	Hope Street (Cross from Column4)	42.51	Beneficial	Downward	Possible exceedance of NAQO
146	5 Sevenoaks Rd, Cosham, Portsmouth PO6 3JP, Column 1	19.21	Beneficial	Downward	No Exceedance of NAQO
147	Sevenoaks Road, Column 4 (Cross from 7 Sevenoaks Rd, Cosham, Portsmouth PO6 3PH)	22.45	**Adverse**	Downward	No Exceedance of NAQO
148	Southampton Road, Column 146	27.09	**Adverse**	**Upward**	No Exceedance of NAQO
149	Southampton Road, Column 147	27.72	Beneficial	Downward	No Exceedance of NAQO
150	Southampton Road, Column 154	30.68	Beneficial	Downward	No Exceedance of NAQO
151	Southampton Road, Column 155	25.71	**Adverse**	Downward	No Exceedance of NAQO
152	Southampton Road, Column 171	34.81	Beneficial	Downward	No Exceedance of NAQO
153	Southampton Road, Column 172	31.77	**Adverse**	Downward	No Exceedance of NAQO
154	Southampton Road, Column 177	33.74	**Adverse**	Downward	No Exceedance of NAQO
155	Southampton Road, Column 178	31.08	**Adverse**	Downward	No Exceedance of NAQO
156	Southampton Road, Column 78	26.04	Beneficial	Downward	No Exceedance of NAQO
157	Church Street (Cross from Column2)	27.06	Beneficial	Downward	No Exceedance of NAQO

Diffusion Tube ID	Location	Annual Mean in *µg/m³*	Short-term	5 Year Trend (2019-2023)	LAQ Status
158	Eastern Road, Column 106	30.51	Beneficial	**Upward**	No Exceedance of NAQO
159	Eastern Road, Column107	33.04	Beneficial	Downward	No Exceedance of NAQO
162	Eastern Road, Column 51	37.04	**Adverse**	Downward	No Exceedance of NAQO
163	Eastern Road, Column 52	34.50	Beneficial	Downward	No Exceedance of NAQO
164	Allaway Avenue, Column 2	28.12	Beneficial	Downward	No Exceedance of NAQO
165	Allaway Avenue, Column 3	24.93	Beneficial	Downward	No Exceedance of NAQO
166	Anchorage Road, Column 2	28.73	Beneficial	Downward	No Exceedance of NAQO
167	Church Street, Column 11	26.65	Beneficial	Downward	No Exceedance of NAQO
168	Copnor Road, Column 15, Copnor	26.58	Beneficial	**Upward**	No Exceedance of NAQO
169	Copnor Road, Column 16, Copnor	31.83	Beneficial	Downward	No Exceedance of NAQO
170	Commercial Road, Column 3	27.70	Beneficial	Downward	No Exceedance of NAQO
171	Commercial Road, Column 4	22.94	Beneficial	Downward	No Exceedance of NAQO
172	Hope Street, Column 11	29.17	Beneficial	Downward	No Exceedance of NAQO
173	Fratton Road, Column 5	31.97	Beneficial	Downward	No Exceedance of NAQO
174	Church Street, Column 12	23.71	Beneficial	Downward	No Exceedance of NAQO
175	Church Street, Column 2	31.41	Beneficial	Downward	No Exceedance of NAQO
176	Anchorage Road, Column 3	25.51	Beneficial	Downward	No Exceedance of NAQO
178	Copnor Road, Copnor, Column3	30.75	Beneficial	**Upward**	No Exceedance of NAQO
179	3 Allaway Ave, Cosham, Portsmouth PO6 3PR	25.12	**Adverse**	**Upward**	No Exceedance of NAQO
181	Trafalgar Gate, Column 3	24.08	Beneficial	**Upward**	No Exceedance of NAQO
182	Trafalgar Gate, Column 4	26.71	Beneficial	Downward	No Exceedance of NAQO

Diffusion Tube ID	Location	Annual Mean in *µg/m³*	Short-term	5 Year Trend (2019-2023)	LAQ Status
183	Flathouse Road Column 2 (11 Flathouse Rd, Portsmouth PO1 4QS)	22.72	Beneficial	Downward	No Exceedance of NAQO
184	Flathouse Road (Cross from 11 Flathouse Rd, Portsmouth PO1 4QS)	22.39	Beneficial	Downward	No Exceedance of NAQO
185	42 Tudor Cres, Cosham, Portsmouth PO6 2SR	21.74	Beneficial	**Upward**	No Exceedance of NAQO
188	Norman House, Kettering Terrace, Portsmouth PO2 7SB, Column 5	23.58	Beneficial	Downward	No Exceedance of NAQO
189	Norman House, Kettering Terrace, Portsmouth PO2 7SB, Column10	24.65	Beneficial	Downward	No Exceedance of NAQO
190	Prospect Road, Column 2	24.54	Beneficial	Downward	No Exceedance of NAQO
191	Prospect Road, Column3	25.70	Beneficial	Downward	No Exceedance of NAQO
192	58 Kingston Rd, Fratton, Portsmouth PO2 7PE	31.01	Beneficial	**Upward**	No Exceedance of NAQO
193	245 Goldsmith Ave, Fratton, Portsmouth, Southsea PO4 0BS (Front Garden)	29.53	**Adverse**	**Upward**	No Exceedance of NAQO
194	48 New Rd, Fratton, Portsmouth PO2 7RB	30.26	Beneficial	**Upward**	No Exceedance of NAQO
213	Kingston Road, Column 4	38.53	Beneficial	**Upward**	No Exceedance of NAQO
214	Anglesea Road (Cross from CAQMS DEFRA)	33.22	Beneficial	Downward	No Exceedance of NAQO
217	Arendal Street, Column 18	27.30	Beneficial	Downward	No Exceedance of NAQO
218	Arendal Street, Cross from (AS-OpCol18)	32.08	Beneficial	Downward	No Exceedance of NAQO
220	Continental Ferry Port, Wharf Road, Column 2	35.54	**Adverse**	**Upward**	No Exceedance of NAQO
221	Continental Ferry Port, Wharf Road, Column 3	29.69	Beneficial	Downward	No Exceedance of NAQO
222	Commercial Rd, Column 10 (Cross from Sovereign Gate, 308-314 Commercial Rd, Portsmouth PO1 4BL)	25.67	Beneficial	Downward	No Exceedance of NAQO
223	Chichester Road, Column2 (outside 14 Chichester Rd, North End, Portsmouth PO2 0AD)	27.50	Beneficial	Downward	No Exceedance of NAQO

Diffusion Tube ID	Location	Annual Mean in µg/m3	Short-term	5 Year Trend (2019-2023)	LAQ Status
224	Chichester Road, Column3 (Outside 5 Chichester Rd, North End, Portsmouth PO2 0AA)	25.60	**Adverse**	Downward	No Exceedance of NAQO
225	Elm Grove, Column 6 (Outside 48-50 Elm Grove, Southsea, Portsmouth, Southsea PO5 1JP)	25.72	Beneficial	Downward	No Exceedance of NAQO
226	Elm Grove, Column 7 (Outside 49 Elm Grove, Southsea, Portsmouth, Southsea PO5 1JF)	25.32	Beneficial	Downward	No Exceedance of NAQO
227	Eastern Road, Column 118	32.88	Beneficial	Downward	No Exceedance of NAQO
228	Eastern Road, Column 119	27.36	Beneficial	Downward	No Exceedance of NAQO
229	Eastern Road, Column 59	34.18	Beneficial	Downward	No Exceedance of NAQO
230	Eastern Road, Column 60	32.10	Beneficial	Downward	No Exceedance of NAQO
231	Fratton Road, Column 18	26.53	Beneficial	Downward	No Exceedance of NAQO
232	Fratton Road, Column 23	33.81	Beneficial	Downward	No Exceedance of NAQO
233	Fratton Road, Column 31	33.48	**Adverse**	Downward	No Exceedance of NAQO
234	Fratton Road, Column 32	21.73	Beneficial	Downward	No Exceedance of NAQO
235	Fratton Road, Column 6	25.92	Beneficial	Downward	No Exceedance of NAQO
236	Fratton Road (Cross from Column 18)	33.32	Beneficial	Downward	No Exceedance of NAQO
237	Fratton Road (Cross from Column 23)	27.52	Beneficial	Downward	No Exceedance of NAQO
238	Goldsmith Avenue, Column 20 (Outside 133-137 Goldsmith Ave, Southsea, Portsmouth, Southsea PO4 8QZ)	23.62	Beneficial	Downward	No Exceedance of NAQO
239	Goldsmith Avenue, Column 21 (Outside 48 Goldsmith Ave, Southsea, Portsmouth, Southsea PO4 8QR)	24.47	Beneficial	Downward	No Exceedance of NAQO
240	12 Gladys Avenue, Column 4 (12 Gladys Ave, North End, Portsmouth PO2 9BE)	22.08	Beneficial	Downward	No Exceedance of NAQO

Diffusion Tube ID	Location	Annual Mean in $\mu g/m^3$	Short-term	5 Year Trend (2019-2023)	LAQ Status
241	Goldsmith Avenue, Column 6 (23 Goldsmith Ave, Southsea, Portsmouth, Southsea PO4 8DU)	24.98	**Adverse**	Downward	No Exceedance of NAQO
242	Goldsmith Avenue, Column 7 (Cross from 31 Goldsmith Ave, Southsea, Portsmouth, Southsea PO4 8DU)	19.12	Beneficial	Downward	No Exceedance of NAQO
243	Gunwarf Road, Column 11 (Front of 12 King Charles St, Portsmouth PO1 2RR)	25.30	Beneficial	**Upward**	No Exceedance of NAQO
244	Gunwarf Road (Cross from Column 4)	24.57	Beneficial	**Upward**	No Exceedance of NAQO
245	Half Moon Street-Bus Stop (Front of 40 Queen St, Portsea, Portsmouth PO1 3HN)	26.08	Beneficial	Downward	No Exceedance of NAQO
246	Half Moon Street, Column 39 (Cross from Premier Inn Hotel Queen St, Portsea, Portsmouth PO1 3EE)	30.69	Beneficial	Downward	No Exceedance of NAQO
247	Holbrook Road, Column 42	28.20	Beneficial	Downward	No Exceedance of NAQO
248	Holbrook Road, Column 44	29.38	Beneficial	Downward	No Exceedance of NAQO
249	Hobrook Road, Column 20	26.24	Beneficial	Downward	No Exceedance of NAQO
250	Hobrook Road (Cross from Column 20)	23.86	Beneficial	**Upward**	No Exceedance of NAQO
251	Hope Street, Column 10	30.49	Beneficial	**Upward**	No Exceedance of NAQO
252	Hope Street, Column 3	29.55	**Adverse**	**Upward**	No Exceedance of NAQO
253	High Street, Column 6 (Cross from10 High St, Portsmouth PO1 2LP)	22.68	**Adverse**	**Upward**	No Exceedance of NAQO
254	High Street, Column 7 (10 High St, Portsmouth PO1 2LP)	21.91	Beneficial	Downward	No Exceedance of NAQO
255	Hope Street (Cross from Column 10)	28.70	Beneficial	Downward	No Exceedance of NAQO
256	Hampshire Terrace, Column 6	28.30	Beneficial	**Upward**	No Exceedance of NAQO
257	Hampshire Terrace (Cross from Column 6)	22.52	Beneficial	Downward	No Exceedance of NAQO
258	Kingston Cresent, Column 12	30.23	Beneficial	Downward	No Exceedance of NAQO
259	Kingston Cresent, Column 13	31.98	Beneficial	Downward	No Exceedance of NAQO

Diffusion Tube ID	Location	Annual Mean in $\mu g/m^3$	Short-term	5 Year Trend (2019-2023)	LAQ Status
260	Kingston Crescent, Column 4 (Cross from Vanguard House)	35.60	**Adverse**	**Upward**	No Exceedance of NAQO
261	Vanguard House, 84-88 Kingston Cres, North End, Portsmouth PO2 8AQ	30.06	**Adverse**	Downward	No Exceedance of NAQO
262	Kingston Road, Column11	31.68	Beneficial	Downward	No Exceedance of NAQO
263	Kingston Road-Opposite Column11	33.16	Beneficial	Downward	No Exceedance of NAQO
264	Lord Montgomery Way, Column1 (St Pauls Rd, Southsea, Portsmouth PO1 2QN)	33.09	Beneficial	Downward	No Exceedance of NAQO
265	Cross from Lord Montgomery Way, Column1 (St Pauls Rd, Southsea, Portsmouth PO1 2QN)	24.68	Beneficial	Downward	No Exceedance of NAQO
266	London Road, Column 23	27.93	**Adverse**	Downward	No Exceedance of NAQO
267	London Road-Opposite Column 23 at Bus stop (LR-OpCol23)	33.70	Beneficial	Downward	No Exceedance of NAQO
268	Market Tavern, Mile End Road, Column 66A	32.75	Beneficial	Downward	No Exceedance of NAQO
269	Museum Road, Camera Column	22.03	Beneficial	Downward	No Exceedance of NAQO
270	Museum Road, Column 3	20.82	Beneficial	Downward	No Exceedance of NAQO
271	Market Way, Column 2	24.78	Beneficial	Downward	No Exceedance of NAQO
272	Market Way, Cross from Column 2	31.06	Beneficial	Downward	No Exceedance of NAQO
273	Old London Road, Column 2	34.62	Beneficial	Downward	No Exceedance of NAQO
277	1 Stubbington Ave, Hilsea, Portsmouth PO2 0HP, Column 2	28.78	**Adverse**	Downward	No Exceedance of NAQO
278	1 Stubbington Ave, Hilsea, Portsmouth PO2 0HP (Cross from Column 2)	26.43	**Adverse**	Downward	No Exceedance of NAQO
279	17 St George's Rd, Portsmouth PO1 2EH, Column 4	24.41	Beneficial	Downward	No Exceedance of NAQO
280	Saint George Road, Column 5 (Cross from 17 St	24.32	**Adverse**	Downward	No Exceedance of NAQO

Diffusion Tube ID	Location	Annual Mean in *µg/m³*	Short-term	5 Year Trend (2019-2023)	LAQ Status
	George's Rd, Portsmouth PO1 2EH, Column 4)				
281	Twyford Avenue- Cross from Stamshwa Road-Bustop (TA-OS)	29.79	**Adverse**	**Upward**	No Exceedance of NAQO
282	Velder Avenuenue, Column 5	34.82	Beneficial	Downward	No Exceedance of NAQO
283	Velder Avenue, Column 6	23.42	Beneficial	Downward	No Exceedance of NAQO
284	Victoria Road North, Column 28	24.60	Beneficial	Downward	No Exceedance of NAQO
285	Victoria Road North, Column 29	27.43	Beneficial	Downward	No Exceedance of NAQO
286	Victoria Road North, Column 36	28.46	Beneficial	Downward	No Exceedance of NAQO
287	Victoria Road North, North	19.72	Beneficial	Downward	No Exceedance of NAQO
288	Victoria Road Northm, Cross from Column 19	26.85	Beneficial	Downward	No Exceedance of NAQO
289	Victoria Road North-South	22.55	Beneficial	Downward	No Exceedance of NAQO
290	Winston Churchill Avenue-North	21.67	**Adverse**	Downward	No Exceedance of NAQO
291	Winston Churchill Avenue-South	22.12	Beneficial	Downward	No Exceedance of NAQO
292	Stamshaw Road- Bus stop	34.94	**Adverse**	**Upward**	No Exceedance of NAQO

Chart 1 to Chart 21 in **Appendix A** illustrate the trend in the last 5 years cross all NDDT monitoring locations and show **no exceedance of NO_2 Annual Mean NAQO**.

Further detailed illustration on the 5-year trend of all NDDT for monitoring period no less than three years are presented in **Appendix F** from **Figure 1 to Figure 156**.

3.3.1.1.3 Continuous Nitrogen Dioxide Data Sets Results (2019-2023)

In this section the ratified and adjusted monitored NO_2 Annual Mean concentrations for the past 5 years are compared with the NO_2 Annual Mean NAQO of 40µg/m³ and a summary of which is presented below for individual years commencing by year 2019.

3.3.1.1.3.1 NO_2 Annual Mean (Table A.3 in Appendix A).

The NO2 Annual Mean Appendix A: Monitoring Results for the last 5 years are compared with the NO2 Annual Mean NAQO (40µg/m3) as shown in Appendix A Table A.3.

None of the CAQMSs was in breach of NO2 Annual Mean NAQO.

Figure A.1 in Appendix A illustrates the trend in the last 5 years cross 5 CAQMS. The trends in Annual Mean NO2 concentrations are illustrated for 5 years long-term CAQMSs data in **Appendix F, Figure F157 to F162.**

A closer examination of the data revealed:

- **London Road (Appendix F, Figure 157).**
    - The NO2 Annual Mean at this kerbside monitoring location decreased by 1.72µg/m3 (a decrease of 5.37%) between 2022 and 2023 and remained below the NO2 Annual Mean NAQO in 2023 (30.36µg/m3) representing a LAQ improvement in the short-term.
    - The NO2 Annual Mean at the monitored location as % of the NO2 Annual Mean NAQO was 75.89%. Hence no breach of the NO2 Annual Mean NAQO.
    - The 2022-2023 NO2 Annual Mean decrease is described as "beneficial".
    - In addition, the NO2 Annual Mean downward trend in the last 5 years still exhibited a LAQ improvement in the long-term that is consistent with the previously reported 5-year trend.

- **Gatcombe Park (Appendix F, Figure 158).**
    - The NO2 Annual Mean at this urban background monitoring location increased by 0.14µg/m3 (an increase of 0.93%) between 2022 and 2023 and remained below the NAQO in 2023 (15.01µg/m3) representing a LAQ deterioration in the short-term.
    - The NO2 Annual Mean at the monitored location as % of the NO2 Annual Mean NAQO was 37.52%.
    - The 2022-2023 NO2 Annual Mean change is described as 'adverse'.
    - However, the NO2 Annual Mean downward trend in the last 5 years still exhibited a LAQ improvement in the long-term that is consistent with the previously reported 5-year trend.

- **Burrfields Road (Appendix F, Figure 159).**
    - The NO2 Annual Mean at this roadside monitoring location decreased by 3.54µg/m3 a decrease of 13.07%) between 2022 and 2023 but remained below the NO2 Annual Mean NAQO in 2023 (23.53µg/m3) representing a LAQ improvement short-term.
    - The NO2 Annual Mean at the monitored location as % of the NO2 Annual Mean NAQO was 58.83%.
    - The 2022-2023 NO2 Annual Mean change is described as 'beneficial'.
    - In addition, the NO2 Annual Mean downward trend in the last 5 years still exhibited a LAQ improvement in the long-term that is consistent with the previously reported 5-year trend.

- **Mile End Road (Appendix F, Figure 160).**
    - The NO2 Annual Mean at this roadside monitoring location decreased by 1.59µg/m3 (a decrease of 5.96%) between 2022 and 2023 but remained below the NO2 Annual Mean NAQO in 2023 (25.14µg/m3) representing a LAQ improvement in the short-term.
    - The NO2 Annual Mean at the monitored location as % of the NO2 Annual Mean NAQO was 62.85%.
    - The 2022-2023 NO2 Annual Mean change is described as 'beneficial'.
    - In the meantime, the NO2 Annual Mean downward trend in the last 5 years still exhibited a LAQ improvement in the long-term that is consistent with the previously reported 5-year trend.

- **Defra's Anglesea Road (Appendix F, Figure 161).**
    - The NO2 Annual Mean at this roadside monitoring location increased by 2.66µg/m3 (an increase of 11.42%) between 2022 and 2023 but remained below the NAQO in 2023 (25.97µg/m3) representing a LAQ deterioration in the short-term.
    - The NO2 Annual Mean at the monitored location as % of the NO2 Annual Mean NAQO was 64.93%.
    - The 2022-2023 NO2 Annual Mean change is described as 'adverse'.

- However, the NO2 Annual Mean downward trend in the last 5 years still exhibited a LAQ improvement in the long-term that is consistent with the previously reported 5-year trend.

- **Alfred Road (Appendix F, Figure 162).**

  - The NO_2 Annual Mean at this roadside monitoring location decreased by 5.75µg/m^3 (a decrease of 13.23%) between 2022 and 2023 and dropped below the NO_2 Annual Mean NAQO in 2023 (37.70µg/m^3) representing a LAQ improvement in the short-term.

  - The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 94.25%. **Hence, the NO_2 Annual Mean is not in excess NO_2 Annual Mean NAQO.**

  The 2022-2023 NO_2 Annual Mean change is described as 'beneficial'.

3.3.1.1.3.2 NO_2 1-hour Mean (Table A.6 in Appendix A).

Ratified and adjusted monitoring results are compared to the NO_2 1-hour Mean NAQO for the past 5 years (hourly mean of 200µg/m^3 not to be exceeded more than 18 times per year).

Figure A.2 in **Appendix A** illustrates the trend in the last 5 years across 5 CAQMS and shows no exceedance of NO_2 1-hour Mean NAQO.

A closer examination of the data revealed:

- No breach of NO_2 1-hour Mean NAQO at any of the CAQMS.
- In addition, none of NO_2 1-hour Mean exceeded 60µg/m^3 which indicates that an exceedance of the 1-hour mean NAQO is highly unlikely.

3.3.2 Particulate Matter

3.3.2.1 Particulate Matter (PM_{10})

3.3.2.1.1 CAQMS Particulate Matter (PM_{10}) Annual Mean

In Table A.6 in Appendix A: Monitoring ratified and adjusted monitored PM10 Annual Mean concentrations for the past 5 years, were compared with the PM10 Annual Mean NAQO (40µg/m3).

Figure A.3 in Appendix A illustrates the trend in the last 5 years (2019-2023) across 5 CAQMS and shows no exceedance of PM10 Annual Mean NAQO.

In this section the trends in Annual Mean PM10 concentrations are illustrated individually for the last 5 years at the long-term CAQMSs (Appendix F from Figure F163 to F168).

A closer examination of the data revealed:

- **London Road CAQMS PM10 Annual Mean (Appendix F, Figure F.163: LR-C2)**
    - The PM10 Annual Mean remained considerably below the PM10 Annual Mean NAQO in the last 5 years (2019-2023).
    - The PM10 Annual Mean decreased by 1.09µg/m3 (a decrease of 6.25%) between 2022 and 2023 but remained below the PM10 Annual Mean NAQO in 2023 (16.30µg/m3) exhibiting a LAQ improvement in the short-term at this location.
    - The PM10 Annual Mean at the monitored location as % of the PM10 Annual Mean NAQO was 40.76%.
    - The 2022-2023 PM10 Annual Mean change is described as being 'beneficial'.
    - In the meantime, the PM10 Annual Mean exhibited a downward trend in the last 5 years demonstrating a LAQ improvement in the long-term in line with the previously reported 5-year trend.

- **Gatcombe Park CAQMS PM10 Annual Mean (Appendix F, Figure F.164: AURN-C4)**
    - The PM10 Annual Mean has remained considerably below the PM10 Annual Mean NAQO in the last 5 years.
    - The PM10 Annual Mean at this urban-background monitoring location decreased by 1.15µg/m3 (a decrease of 7.32%) between 2022 and 2023 and remains below the PM10 Annual Mean NAQO in 2023 (14.55µg/m3). This decrease represents a LAQ improvement short-term at this location.
    - The PM10 Annual Mean at the monitored location as % of the PM10 Annual Mean NAQO was 36.37%.
    - The 2022-2023 PM10 Annual Mean change is described as being 'beneficial'.

- In the meantime, the PM10 Annual Mean exhibited a downward trend in the last 5 years representing a LAQ improvement in the long-term.

- **Burrfields Road CAQMS PM10 Annual Mean (Appendix F, Figure F.165: BR-C6)**
  - The PM10 Annual Mean has remained considerably below the PM10 Annual Mean NAQO for the third consecutive year.
  - The PM10 Annual Mean at this roadside monitoring location increased by 0.28µg/m3 (an increase of 1.76%) between 2022 and 2023 and remained below the NAQO in 2023 (16.4µg/m3) representing a LAQ deterioration in the short-term.
  - The PM10 Annual Mean at the monitored location as a % of the PM10 Annual Mean NAQO was 41.01%.
  - The 2022-2023 PM10 Annual Mean change is 'adverse'.
  - In the meantime, the PM10 Annual Mean still exhibited an upward trend in the last 5 years, demonstrating a LAQ deterioration in the long-term.

- **Mile End Road CAQMS PM10 Annual Mean (Appendix F, Figure F.166: MER-C7)**
  - The PM10 Annual Mean has remained considerably below the PM10 Annual Mean NAQO in the last 5 years.
  - The PM10 Annual Mean at this roadside monitoring location increased by 1.07µg/m3 (an increase of 7.59%) between 2022 and 2023 and remained below the PM10 Annual Mean NAQO in 2023 (15.11µg/m3) representing a LAQ deterioration in the short-term.
  - The PM10 Annual Mean at the monitored location as % of the PM10 Annual Mean NAQO was 37.77%.
  - The 2022-2023 PM10 Annual Mean change is 'adverse'.
  - However, the PM10 Annual Mean exhibited a downward trend in the last 5 years, demonstrating a LAQ improvement in the long-term.

- **Anglesea Road CAQMS PM10 Annual Mean (Appendix F, Figure F.167: DEFRA-C7)**

  - The PM10 Annual Mean has remained considerably below the PM10 Annual Mean NAQO in the last 5 years.
  - The PM10 Annual Mean at this roadside monitoring location decreased by 0.55µg/m3 (a decrease of 2.85%) between 2022 and 2023 and remained below the PM10 Annual Mean NAQO in 2023 (18.72µg/m3) representing a LAQ improvement in the short-term.
  - The PM10 Annual Mean at the monitored location as a % of the PM10 Annual Mean NAQO was 46.80%.
  - The 2022-2023 PM10 Annual Mean change is 'beneficial'.
  - In the meantime, the PM10 Annual Mean still exhibited a downward trend in the last 5 years, demonstrating a LAQ improvement in the long-term.

- **Alfred Road CAQMS PM10 Annual Mean (Appendix F, Figure F.168: AR-C8)**
  - The PM10 Annual Mean has remained considerably below the PM10 Annual Mean NAQO in the last two years.
  - The PM10 Annual Mean at this roadside monitoring location decreased by 0.65µg/m3 (a decrease of 3.66%) between 2022 and 2023 and remained below the PM10 Annual Mean NAQO in 2023 (17.03µg/m3) representing a LAQ improvement in the short-term.
  - The PM10 Annual Mean at the monitored location as % of the PM10 Annual Mean NAQO was 42.58%.
  - The 2022-2023 PM10 Annual Mean change is 'beneficial'.
  - In the meantime, the PM10 Annual Mean still exhibited a downward trend in the last 5 years, demonstrating a LAQ improvement in the long-term.

3.3.2.1.2 CAQMS Particulate Matter (PM_{10}) 24-hour Mean.

In **Table A.7 in Appendix A**, monitoring results were compared to the ratified continuous monitored PM10 24-hour Mean concentrations for the past 5 years (2019-2023) with PM10 24-hour Mean NAQO (50µg/m3, not to be exceeded more than 35 times per year).

None of the CAQMSs was in breach of PM10 24-hour Mean NAQO.

Figure A.4 in Appendix A illustrates the trend in the last 5 years across 5 CAQMS and shows no exceedance of PM10 24-hour Mean NAQO.

3.3.2.2 Particulate Matter ($PM_{2.5}$)

3.3.2.2.1 CAQMS Particulate Matter ($PM_{2.5}$) Annual Mean

In **Table A.7 in Appendix A**, illustrates the ratified continuous monitored PM2.5 Annual Mean concentrations for the past 5 years (2019-2023).

In this section the trends in Annual Mean PM2.5 are illustrated individually for 5 years long-term CAQMSs data from **Figure F169 to F173**.

Figure A.5 in Appendix A illustrates the trend in the last 5 years across all continuous monitoring in Portsmouth with the exception of DEFRA's CAQMS.
This shows that:

- **London Road CAQMS PM2.5 Annual Mean (Appendix F, Figure F.169: LR-C2)**
  - The PM2.5 Annual Mean has remained considerably below the PM2.5 Annual Mean NAQO in the last 5 years.
  - In 2023 the PM2.5 Annual Mean decreased by 1.07µg/m3 (a decrease of 10.22%) between 2022 and 2023 (9.40 µg/m3) exhibiting a LAQ improvement in the short-term.
  - The 2022-2023 PM2.5 Annual Mean change is described as 'beneficial'.
  - In the meantime, the PM2.5 Annual Mean exhibited a downward trend in the last 5 years resulting in a LAQ improvement in the long-term.

- **Gatcombe Park CAQMS PM2.5 Annual Mean (Appendix F, Figure F.170: AURN-C4)**
  - The PM2.5 Annual Mean has remained considerably below the PM2.5 Annual Mean NAQO for the fifth consecutive year.
  - The PM2.5 Annual Mean decreased by 0.77µg/m3 (a decrease of 8.32%) between 2022 and 2023 (8.49µg/m3) exhibiting a LAQ improvement in the short-term.
  - The 2022-2023 PM2.5 Annual Mean change is described as 'beneficial'.
  - In the meantime, the PM2.5 Annual Mean exhibited a downward trend in the last 5 years, demonstrating a LAQ improvement in the long-term.

- **Burrfields Road CAQMS PM2.5 Annual Mean (Appendix F, Figure F.171: BR-C6)**
  - The PM2.5 Annual Mean has remained considerably below the PM2.5 Annual Mean NAQO for the third consecutive year.

- The PM2.5 Annual Mean increased this year by 0.04µg/m3 (an increase of 0.37%) between 2022 and 2023 (9.89µg/m3) exhibiting a LAQ deterioration in the short-term.
- The 2022-2023 PM2.5 Annual Mean change is 'adverse'.
- In the meantime, the PM2.5 Annual Mean represented an upward trend in the last three years demonstrating a LAQ deterioration in the long-term.

- **Mile End Road CAQMS PM2.5 Annual Mean (Appendix F, Figure F.172: MER-C7)**
  - The PM2.5 Annual Mean has remained considerably below the PM2.5 Annual Mean NAQO for the fifth consecutive year.
  - The PM2.5 Annual Mean increased this year by 0.83µg/m3 (an increase of 9.96%) between 2022 and 2023 (9.15µg/m3) exhibiting a LAQ deterioration in the short-term.
  - The 2022-2023 PM2.5 Annual Mean change is 'adverse'.
  - However, the PM2.5 Annual Mean represented a downward trend in the last 5 years demonstrating a LAQ improvement in the long-term.

- **Alfred Road CAQMS PM2.5 Annual Mean (Appendix F, Figure F.173: AR-C9)**
  - The PM2.5 Annual Mean has remained considerably below the PM2.5 Annual Mean NAQO for the second consecutive year.
  - The PM2.5 Annual Mean decreased this year by 0.69µg/m3 (a decrease of 7.02%) between 2022 and 2023 (9.14µg/m3) exhibiting a LAQ improvement in the short-term.
  - The 2022-2023 PM2.5 Annual Mean change is 'beneficial'.
  - In the meantime, the PM2.5 Annual Mean represented a downward trend in the last two years demonstrating a LAQ improvement in the long-term.

3.3.3 Sulphur Dioxide (SO_2).

PCC does not monitor for sulphur dioxide as it is not a LAQ concern in Portsmouth.

3.4 Local Air Quality Monitoring Conclusions.

3.4.1 Nitrogen Dioxide (NO_2).

3.4.1.1 NDDT Monitoring.

3.4.1.1.1 NDDT NO_2 Annual Mean.

The NDDT survey covered 228 sites (excluding the six Co-location sites) where monitoring was carried out for the past three years in some locations while others were monitored for four and 5 years.

The 2023 NO_2 Annual Mean levels were **in excess of the NO_2 Annual Mean NAQO** at three locations (site identity numbers 117, 118, and 145). Also, these locations were in excess of the NO_2 Annual Mean NAQO in 2021 and 2022. These are located along the road links, as identified by Defra's Pollution Climate Mapping (PCM) model for Portsmouth, just outside the existing AQMA 11:

- Alfred Road, south / west of AQMA11:
    - **117: Alfred Road, 42.79 µg/m³ (AR-Col 9).**
    - **118: Alfred Road, 43.72 µg/m³ (AR-Col12).**
- Hope Street south / west of AQMA11:
    - **145: Hope Street, 42.51 µg/m³ (HS-OppCol4).**

In addition, the NO_2 Annual Mean dropped below the annual average NAQO at two further two locations in 2023:

- Market Way south / west of AQMA11 on Market Way that is an extension of Alfred Road to the East:
    - **120: Market Way,** 35.73 µg/m³ **(MW-OppStABS):** The annual mean was **44.88 µg/m³** in 2022 to drop in 2023 to 35.73 µg/m³.
- **Kingston Road (KR-Col4):**
    - **213: Kingston Road,** 38.53 µg/m³ **(KR-Col4):** The 2022 NO_2 Annual Mean increased from 2021 to 2022 to reach 40 µg/m³. This site is located in

AQMA6**.** However, in 2023 the annual mean decreased to drop to 38.53 µg/m^3.

LAQ improved across the majority of NDDT monitored locations in the short and long-term cross the city:

c) In the short-term, NO_2 Annual Mean increased between 2022 and 2023 at 46 locations (20.18%) and, decreased at the remaining 182 locations (79.82%). Hence, an improvement in LAQ in the short-term.

d) In the long-term, NO_2 Annual Mean trend for the last 5 years (2019-2023) exhibited "Downward" trend at 191 locations (83.77%), and an "Upward" trend at the remaining 37 locations (16.23%). Hence, an improvement in LAQ in the long-term.

In addition, LAQ improved within and in the vicinity of the 5 AQMAs in the short and long-term.

Even though the 2023 NO_2 Annual Mean levels were in excess of the NO_2 Annual Mean NAQO at three locations (117, 118, and 145) and in the absence of immediate relevant exposure as defined in the LAQM.TG, the annual means at these locations do not constitute exceedances of the NO_2 Annual Mean NAQO. Hence, no declaration of new AQMA is required.

Total NDDT	228	%ages
Down	182	79.82%
Up	46	20.18%
Downward	190	83.33%
Upward	38	16.67%

3.4.1.1.2 NDDT NO_2 1-hour Mean.

None of CAQMS NO_2 Annual Mean exceeded 60µg/m^3 which indicates that an exceedance of the NO_2 1-hour Mean NAQO is highly unlikely.

3.4.1.2 NO_2 Continuous Monitoring.

3.4.1.2.1 Continuous NO_2 Annual Mean

The 2023 NO_2 Annual Mean level decreased across four out of the six CAQMSs (66.67%) and still met the NO_2 Annual Mean NAQO at all long-term CAQMSs. These changes are considered as 'beneficial' with variable degrees. In the meantime, an overall long-term AQ improvement over the last 5 years (2019-2023) was exhibited as a downward trend emerged across all six CAQMSs.

No breach of NO_2 Annual Mean NAQO (40 µg/m^3) was registered at any of the six CAQMs. However, levels in excess of NO_2 Annual Mean NAQO were **no longer** recorded at our newly established 5th CAQMS at Alfred Road (37.70 µg/m^3):

CAQMS	µg/m^3	Short-term	Long-term	Exceedance
London Road	**30.36**	**Beneficial**	**Downward**	**No**
AURN Gatcombe Park Primary School	**15.01**	**Adverse**	**Downward**	**No**
Burrfields Road	**23.53**	**Beneficial**	**Downward**	**No**
Mile End Road	**25.14**	**Beneficial**	**Downward**	**No**
Defra, Anglesea Road	**25.97**	**Adverse**	**Downward**	**No**
Alfred Road	**37.70**	**Beneficial**	**Downward**	**No**

3.4.1.2.2 . Continuous NO_2 Hourly Mean

- NO_2 1-hour means show no breach of NO_2 1-hour mean NAQO.

- In addition, none of CAQMS NO_2 Annual Mean exceeded 60µg/m^3 which indicates that an exceedance of the 1-hour mean NAQO is highly unlikely.

3.4.2 Particulate Matter (PM_{10}).

3.4.2.1 PM_{10} Annual Mean.

3.4.2.1.1.1 CAQMS Annual Mean.

- There has been no exceedance of the PM_{10} Annual Mean NAQO since 2019 at any of the Portsmouth based CAQMSs.
- The highest PM_{10} Annual Mean recorded in 2019 was 19.49µg/m^3 at Defra's CAQMS located at Anglesea Road.
- In the long-term (2019-2023), PM_{10} Annual Means are in decline across all PCC and Defra's owned CAQMSs, except for the Burrfields Road CAQMS where an "upward" trend was exhibited.
- In the short-term, PM_{10} Annual Mean was in decline across all CAQMS, except for Burrfields and Mile End Road CAQMSs where the Annual Mean increased 0.28 and 1.07µg/m^3 respectively.
- The 2023 PM_{10} monitoring concluded:

Site	µg/m^3	(Short-term)	(Long-term)	Exceedance
London Road	**16.30**	**Beneficial**	**Downward**	**No**
AURN Gatcombe Park Primary School	**14.55**	**Beneficial**	**Downward**	**No**
Burrfields Road	**16.40**	**Adverse**	**Upward**	**No**
Mile End Road	**15.11**	**Adverse**	**Downward**	**No**
DEFRA Anglesea Road	**18.72**	**Beneficial**	**Downward**	**No**
Alfred Road	**17.03**	**Beneficial**	**Downward**	**No**

3.4.2.1.1.2 CAQMS PM_{10} 24-hour Mean.

- The the highest number of PM_{10} 24-hour Mean in excess of 50µg/m^3 reached four occurrences since 2019 at Alfred Road CAQMS. This does not amount to an exceedance of the PM_{10} 24-hour Mean NAQO.
- The highest number of PM_{10} 24-hour Mean in excess of 50µg/m^3 reached four occurrences in 2022 at Alfred Road CAQMS. This does not amount to an exceedance of the PM_{10} 24-hour Mean NAQO.

3.4.3 Particulate Matter ($PM_{2.5}$)

3.4.3.1 $PM_{2.5}$ Annual Mean

In 2023 $PM_{2.5}$ Annual Mean remains below the $PM_{2.5}$ Annual Mean NAQO at all CAQMSs with the highest Annual Mean level (9.89 µg/m^3) being recorded at Burrfields Road CAQMS:

- In the short-term, the 2023 $PM_{2.5}$ Annual Mean:
  - decreased at London Road, Gatcombe Park (AURN) and Alfred Road CAQMSs resulting in short-term AQ improvement.
  - increased at Burrfields Road and Mile End Road CAQMS resulting in short-term AQ deterioration.
- In the long-term however the last 5 year (2019-2023) $PM_{2.5}$ Annual Mean exhibited a downward trend cross London Road, Gatcombe Park AURN), Mile End Road and Alfred Road CAQMSs resulting in a long-term AQ improvement.

Historically, the highest $PM_{2.5}$ Annual Mean recorded in Portsmouth was 14.26µg/m^3 in 2014 at the AURN CAQMS. This level dropped in 2018 to 12.32µg/m^3, decreased further in 2019 to 8.9µg/m^3 and then started to increase since to reach 8.49µg/m^3 in 2023.

It is not always possible to categorically state why the NO_2, $PM_{2.5}$ and PM_{10} levels changed in several areas across the city in 2022, given that a multitude of factors influence pollutant generation and their subsequent dispersion. Such influences are wide ranging and complex but are highly likely to include the impact of COVID-19 as referenced earlier within this ASR.

Site	µg/m³	(Short-term)	(Long-term)	Exceedance
London Road	**9.40**	**Beneficial**	**Downward**	**No**
AURN Gatcombe Park Primary School	**8.49**	**Beneficial**	**Downward**	**No**
Burrfields Road	**9.89**	**Adverse**	**Upward**	**No**
Mile End Road	**9.15**	**Adverse**	**Downward**	**No**
Alfred Road	**9.14**	**Beneficial**	**Downward**	**No**

It is not always possible to categorically state why the NO_2, $PM_{2.5}$ and PM_{10} levels changed in several areas across the city in 2021, given that a multitude of factors influence pollutant generation and their subsequent dispersion.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) [1]	Distance to kerb of nearest major road (m) [2]	Inlet Height (m)
C2	London Road	Kerbside	464925	102129	NO_2 PM2.5 PM10	AQMA6	Chemiluminescent, HORIBA's APDA-372	1.8m of the kerbside further to the south of the station	1m	1.8m
C4	Gatcombe Park Primary School (AURN)	Urban Background	465403	103952	NO_2 PM10 PM2.5 O3	N	Chemiluminescent, FDMS	0m Within the school perimeter	119 m	2.5m
C6	Burrfields Road	Roadside	466004	102348	NO_2	N	Chemiluminescent	0.5m	4.5m of Burrfields Road & 5.5m of Copnor Road	1.8m
C7	Mile End Road	Roadside	464397	101270	NO_2 PM2.5 PM10	AQMA11	Chemiluminescent, HORIBA's APDA-372	2m	6.5m	1.8m

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest major road (m) (2)	Inlet Height (m)
C8	Anglesea Road (Defra)	Roadside	463835	100259	NO_2 PM10	AQMA7	Chemiluminescent, FDMS	5m	2.5m	1.8m
C9	Alfred Road	Roadside	463933	100509	NO2 PM2.5 PM10	N	Chemiluminescent, HORIBA's APDA-372	0m	2m	1.87

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g., installed on the façade of a residential property).

(2) N/A if not applicable.

Table A.2 – Details of Non-Automatic Monitoring Sites

Locations highlighted in Red are discontinued.

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
1	Lord Montgomery Way (LMW-FST)	Roadside	463872	99874	NO_2	Close	On the Façade	3.7m	No	2.34
2	12 Chadderton Gardens (CG-12)	Urban background	463705	99371	NO_2	N	On the Façade	N/A	No	2
3	High Street (HS-121A)	Roadside	463408	99460	NO_2	N	On the Façade	3.1m	No	2.05
4	Queen Street (QS-Col 30)	Roadside	463190	100390	NO_2	AQMA12	N/A	3m	No	2.56
5	119 Whale Island Way (WIW-119)	Roadside	464230	102194	NO_2	Close to AQMA11	On the Façade	16.23m	No	2.15
6	88 Stanley Road (SR-88)	Roadside	464331	102197	NO_2	Close to AQMA11	On the Façade	9.88m	No	2.58
7	138 Lower Derby Road (LDR-138)	Urban background	464291	102279	NO_2	N	On the Façade	37.57m	No	2.17
8	492 Hawthorn Crescent (HC-492)	Urban background	466690	104355	NO_2	N	On the Façade	34m	No	1.99
9	6 Northern Road (NR-6)	Roadside	465621	105528	NO_2	N	On the Façade	5.43m	No	2.06

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
10	20 Stroudley Avenue (SA-20)	Urban background	467107	104850	NO_2	N	On the Façade	N/A	No	2
11	Anchorage Road (AR-Col6)	Roadside	466869	103457	NO_2	N	11.76M	6.56m	No	2.4
14	4 Merlyn Drive (MD-4)	Roadside	466109	103736	NO_2	N	On the Façade	11.26m	No	1.6
15	29 Milton Road (MR-29)	Roadside	466120	101324	NO_2	N	On the Façade	7.04m	No	2.77
16	Parade Court, London Road (LR-PC)	Roadside	465474	104205	NO_2	N	5.32m	5.15m	No	2.21
18	4 Milton Road (MR-4)	Roadside	466097	101332	NO_2	N	On the Façade	6.13m	No	1.91
19	7 Velder Avenue (VA-7)	Roadside	466392	100226	NO_2	AQMA9	On the Façade	4.44m	No	2.24
20	136 Eastney Rd (ER-136)	Roadside	466712	99415	NO_2	N	On the Façade	6.23m	No	2.03
21	118 Albert Road (AR-116)	Roadside	465209	98964	NO_2	N	On the Façade	2.36m	No	2.6
22	2 Victoria Road North (VRN-2)	Roadside	464778	99306	NO_2	N	On the Façade	5.53m	No	3.42
23	106 Victoria Road North (VRN-106) Column19	Roadside	464974	99766	NO_2	N	2.37m	2.42m	No	2.52
24	221 Fratton Road (FR-221)	Roadside	465111	100737	NO_2	AQMA6	On the Façade	4.21m	No	1.9

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
25	117 Kingston Rd (KR-117)	Roadside	465036	101547	NO_2	AQMA6	On the Façade	2.46m	No	2.13
26	The Tap London Road (LR-Tap)	Kerbside	464900	101976	NO_2	AQMA6	On the Façade	1.91m	No	2.36
30	Market Tavern (Mile End Rd) (MER-MT)	Roadside	464478	101457	NO_2	AQMA11	On the Façade	12.73m	No	2.6
34	Sovereign Gate, Commercial Rd (ComR-UF)	Roadside	464425	100893	NO_2	AQMA11	On the Façade	4.40m	No	#N/A
35	Hampshire Terrace (HT-AM)	Roadside	463837	99759	NO_2	Close to AQMA7	On the Façade	4.9m to 10.74m	No	2.06
36	Elm Grove (EG-103)	Roadside	464501	99329	NO_2	N	On the Façade	2.26m	No	2.1
37	London Road CAQMS-R1	Kerbside	464925	102129	NO_2	AQMA6	N/A	2.54	Y	1.96
38	Gatcombe Park Primary School CAQMS-AURN	Urban Background	465403	103952	NO_2	N	Inside School	5.35	Y	3.49
39	Burrfields Road CAQMS-R4	Roadside	466004	102348	NO_2	N	3.04 m	3.61	Y	196
40	Mile End Road CAQMS-R5	Roadside	464397	101270	NO_2	AQMA11	2.52 m	6.15	Y	1.88
42	Kingston Crescent-Admiral Drake PH-(KC-ADPH)	Roadside	464552	101940	NO_2	N	On the Façade	4.5	No	2.24
43	Kingston Crescent-Vanguard House (KC-VH)	Urban background	464774	101922	NO_2	N	On the Façade	5.15	No	1.95

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
44	Opposite 6 Market Way, MW-(opp 6)	Roadside	464336	100833	NO_2	Close to AQMA11	N/A	6.1	No	2.55
45	5 Market Way (MW-4)	Roadside	464344	100808	NO_2	Close to AQMA11	N/A	3.55	No	2.03
46	Mile End Road-Col5(MW-Col5)	Roadside	464339	101273	NO_2	AQMA11	N/A	3.35m	No	2.47
47	1 Stamshaw Road West (SR-W1)	Roadside	464586	102125	NO_2	N	On the Façade	2.16	No	2.14
48	28 Stamshaw Road East (SR-E28)	Urban background	464597	102119	NO_2	N	On the Façade	1.97	No	2.38
49	Half Moon Street-The Ship and Castle(PH) (HMS-S&CPH)	Urban background	463042	100315	NO_2	AQMA12	On the Façade	7.37	No	2.43
50	47 Queen Street (QS-47)	Roadside	463388	100398	NO_2	AQMA12	On the Façade	2.75	No	2.13
51	57 Queen Street (QS-57)	Urban background	463333	100395	NO_2	AQMA12	On the Façade	5.55	No	2.12
52	Column 29 Queen Street (QS-Col29)	Roadside	463235	100412	NO_2	AQMA12	11.76M	0.6	No	2.54
53	Anglesea Road CAQMS-Defra	Roadside	463835	100259	NO_2	N	N/A	3	Y	1.72

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
54	Alfred Road CAQMS-R6	Roadside	463933	100509	NO_2	N	N/A	2	Y	1.87
55	Gunwharf Road, Column 12 (GWR-Col12)	Roadside	463224	99590	NO_2	N	5.03 m	1.5 m	No	2.55
56	Gunwharf Road, Column 4 (GWR-Col4)	Roadside	463261	99782	NO_2	N	N/A	1.5 m	No	2.46
58	9 St Georges Road (St GS-9)	Roadside	463487	99659	NO_2	N	On the Façade	6	No	1.98
59	Milton Road, Column 41 (MR-Col41)	Roadside	466263	100334	NO_2	N	N/A	1.5 m	No	2.55
60	Column 42 Milton Road (MR-Col42)	Roadside	466201	100478	NO_2	N	5.32m	2.58	No	2.29
61	1/10 Southwick House Milton Road on the fence (MR-SH)	Roadside	466136	100610	NO_2	N	1.51 m	4.03	No	1.77
62	12 Hambrook House Milton Road (MR-HH)	Roadside	466165	100573	NO_2	N	On the Façade	13.53	No	1.93
63	209 Milton Road (MR-209)	Roadside	466354	100172	NO_2	AQMA9	On the Façade	5.55	No	1.92
64	Summerson Lodge Milton Road (MR-SL)	Roadside	466326	100165	NO_2	AQMA9	On the Façade	9.8	No	2.1

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
65	Moorings Way-12 (MW-12)	Roadside	466681	100373	NO_2	Close	11.76M	1.5 m	No	1.78
66	1 Velder Avenue (VA-1)	Roadside	466267	100216	NO_2	AQMA9	On the Façade	4.06	No	2.27
67	23 Velder Avenue (VA-23)	Roadside	466457	100253	NO_2	AQMA9	2.37m	4.4	No	2.16
68	36 Velder Avenue (VA-36)	Roadside	466501	100277	NO_2	AQMA9	On the Façade	4.06	No	2.04
69	Column 4 Velder Avenue (VA-Col4)	Roadside	466396	100248	NO_2	AQMA9	N/A	0.43	No	2.05
70	Milton Primary School (ER-DS)	Roadside	466667	99546	NO_2	N	On the Façade	8	No	2.2
71	19 Havant Road (HR-19)	Kerbside	465711	105624	NO_2	N	On the Façade	8.5	No	2.17
72	60 Northern Road (NR-60)	Roadside	465657	105577	NO_2	N	On the Façade	10.8	No	1.62
73	52 Northern Road (NR-52-54)	Roadside	465653	105544	NO_2	N	On the Façade	10.8	No	1.85
74	Column 38 Northern Road (NR-Col38)	Roadside	465610	105383	NO_2	N	N/A	1.61	No	2.22
75	1-6 Chipstead House Southampton Road (SR-CH)	Roadside	465618	105619	NO_2	N	On the Façade	22	No	2.38
76	142 Copnor Road (CR-142)	Roadside	466002	102053	NO_2	N	On the Façade	5.77	No	2.11

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
77	Copnor School Playground Copnor Road (CR-School)	Roadside	466008	102097	NO_2	N	Inside School	12.6	No	2.1
78	3 Goldsmith Avenue (GA-3)	Roadside	466523	99599	NO_2	N	On the Façade	8.8	No	2.1
80	147 Albert Road (AR-147)	Urban background	465204	98978	NO_2	N	N/A	2.42	No	2.61
81	Column 22 Albert Road (AR-Col22)	Roadside	465278	98968	NO_2	N	0.5 M	0.34	No	2.53
82	106-108 Albert Road (On Waverley Road) (AR-WR)	Roadside	465178	98945	NO_2	N	2m	2.45	No	2.42
83	141 Albert Road (AR-141)	Roadside	465166	98982	NO_2	N	N/A	2.67	No	2.58
84	145 Albert Road (On Lawrence Road) (AR-145)	Roadside	465198	98996	NO_2	N	N/A	1.97	No	2.61
85	98-100 Albert Road (AR-98/100)	Urban background	465150	98968	NO_2	N	On the Façade	2.33	No	2.51
86	91 Fawcett Road (FR-91)	Roadside	465201	99734	NO_2	N	N/A	5.15	No	2.26

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
87	Priory School Fawcett Road (FR-PSc)	Roadside	465183	99904	NO_2	N	On the Façade	6.44	No	1.94
88	1-8 Brandon House Lawrence Road (LR-BH)	Urban background	465186	98996	NO_2	N	On the Façade	2.16	No	2.6
89	110A Albert Road (On Waverley Road)	Urban background	465190	98946	NO_2	N	On the Façade	2.2	No	2.15
90	18 Baffins Road (BR-18)	Urban background	466095	100813	NO_2	N	On the Façade	5.96	No	1.8
91	3 Baffins Road (BR-3)	Urban background	466070	100819	NO_2	N	On the Façade	5.09	No	2.01
92	Locksway Road-13 (LR-13)	Roadside	466525	99736	NO_2	N	On the Façade	2.5 m,	No	1.97
93	40 Victoria Road North (Back of nursery) (VRN-40)	Roadside	464826	99500	NO_2	N	4.02 m	4.34	No	2.05
96	Mary Rose Centre Albert Road (AR-MRC)	Urban background	465465	98937	NO_2	N	2.33 m	3.29	No	1.62
97	29 Rowan Court, Goldsmith Avenue (GA-29)	Roadside	465896	99852	NO_2	N	5.32m	5	No	1.98

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
98	13-29 Eastern Road (ER-13/29)	Roadside	466700	100591	NO_2	Close to AQMA9	On the Façade	7.5	No	2.11
99	64-80 Eastern Road (ER-64/80)	Roadside	466727	100572	NO_2	Close to AQMA9	On the Façade	4.4	No	2.05
100	340 Havant Road (HR-340)	Roadside	467783	105677	NO_2	N	On the Façade	8.3	No	2
101	Column 52 Havant Road (HR-Col52)	Roadside	467693	105687	NO_2	N	14.80 m	0.9	No	2.3
102	Hillside & Wymering Centre Service Road (SR-HWC)	Roadside	464585	105714	NO_2	N	Inside Youth Centre (playground)	7.8	No	2.5
103	UTC Portsmouth (UTC)	Roadside	465556	103968	NO_2	N	2.37m	11.5	No	1.9
108	137 London Road (LR-137)	Roadside	464951	102418	NO_2	Close to AQMA6	N/A	3.13	No	2.52
109	122/124 London Road (LR-122/124)	Roadside	464961	102383	NO_2	Close to AQMA6	N/A	3.95	No	1.98
110	2a/2b Gladys Avenue (GA-2a/2b)	Roadside	464913	102419	NO_2	Close to AQMA6	On the Façade	2.85	No	2.5
111	Column 3 Gladys Avenue (GA-Col3)	Roadside	464898	102414	NO_2	Close to AQMA6	11.22 m	1.9	No	2.6
117	Alfred Road Column 9 (AR-Col 9)	Roadside	463901	100508	NO_2	Close to AQMA11	N/A	1.75	No	2.68

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
118	Alfred Road Column 12 (AR-Col 12)	Roadside	463951	100531	NO_2	Close to AQMA11	N/A	1.14	No	2.62
119	Market Way-left of St Agatha's bus shelter (MW-StABS)	Kerbside	464098	100748	NO_2	Close to AQMA11	N/A	0.98	No	2.36
120	Market Way Opposite MW-StABS (MW-OppStABS)	Roadside	464086	100765	NO_2	Close to AQMA11	N/A	0.55	No	2.35
121	46 London Road (LR-46)	Roadside	464930	102071	NO_2	AQMA6	N/A	2.85	No	2.44
122	47 London Road (LR-47)	Roadside	464918	102090	NO_2	AQMA6	N/A	2.3	No	2.54
124	Hillsley Road Column 23 (HR-Col23)	Roadside	462491	106553	NO_2	N	7.95 m	25.8	No	2.28
125	7 Tudor Crescent (TC-7)	Roadside	465624	104626	NO_2	N	On the Façade	23.7	No	1.86
126	Column 32 Port Way (PW-Col32)	Roadside	463756	105253	NO_2	N	5.52 m	2	No	2.69
127	133 Southampton Road (SR-133)	Roadside	463536	105652	NO_2	N	On the Façade	21.6	No	2.1
128	47 Derby Road (DR-47)	Roadside	464710	102222	NO_2	Close to AQMA6	On the Façade	4.25	No	2
129	50 Derby Road (DR-50)	Roadside	464711	102239	NO_2	Close to AQMA6	On the Façade	4.09	No	2

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
130	120 London Road (On Stubbington Avenue Bus Stop) (SA-BS)	Kerbside	464986	102344	NO_2	Close to AQMA6	N/A	0.56	No	2.49
131	16 London Road on Chichester Road (CR-PP)	Roadside	464925	101969	NO_2	Close to AQMA6	N/A	1.7	No	2.29
132	Column 50 Milton Road (MR-Col50)	Roadside	466344	100139	NO_2	Close to AQMA6	5.12 m	2.74	No	2.42
133	Labour Party Club Holbrook Road (HR-LPC)	Roadside	464882	100475	NO_2	N	1.65 m	2.18	No	2.25
135	Southampton Road - North (SR-N)	Kerbside	464526	105665	NO_2	N	N/A	1.24	No	2.62
136	Southampton Road - North (SR-S)	Roadside	464512	105641	NO_2	N	N/A	0.4	No	2.44
137	Column 96 Southampton Road (SR-Col96)	Roadside	464082	105658	NO_2	N	N/A	3.1	No	2.4
138	Column 97 Southampton Road (SR-Col97)	Kerbside	464067	105633	NO_2	N	N/A	1.9	No	2.34
139	Column79 Southampton Road (SR-Col79)	Roadside	463938	105638	NO_2	N	N/A	3.1	No	2.4
143	8 Old London Road (OLR-8)	Roadside	465686	103868	NO_2	N	On the Façade	8.5	No	1.9
144	Column 3 Old London Road (OLR-Col3)	Kerbside	465665	103832	NO_2	N	N/A	0.7	No	2.59

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
145	Cross from Hope Street Column4	Kerbside	464259	100965	NO_2	Close to AQMA11	N/A	3.24	No	2.45
146	Column 1 Sevenoaks Road (SOR-Col1)	Roadside	465265	105807	NO_2	N	3.92 m	11.9	No	2.48
147	Column 4 Sevenoaks Road (SOR-Col4)	Roadside	465303	105817	NO_2	N	N/A	0.47	No	2.57
148	Column 146 Southampton Road (SR-Col146)	Roadside	464670	105713	NO_2	N	23.59 m	2.6	No	2.45
149	Column 147 Southampton Road (SR-Col147)	Roadside	464665	105737	NO_2	N	N/A	2.68	No	2.47
150	Column 154 Southampton Road (SR-Col154)	Roadside	464791	105775	NO_2	N	11.31 m	2.4	No	2.56
151	Column 155 Southampton Road (SR-Col155)	Roadside	464806	105751	NO_2	N	6.58 m	2.66	No	2.37
152	Column 171 Southampton Road (SR-Col171)	Roadside	465169	105763	NO_2	N	9.85 m	0.9	No	2.55
153	Column 172 Southampton Road (SR-Col172)	Kerbside	465173	105784	NO_2	N	7.95 m	1.07	No	2.57
154	Column 177 Southampton Road (SR-Col177)	Roadside	465337	105726	NO_2	N	13.45 m	1.1	No	2.52

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
155	Column 178 Southampton Road (SR-Col178)	Roadside	465350	105748	NO_2	N	7.97 m	1.05	No	2.62
156	Column 78 Southampton Road (SR-Col78)	Roadside	463936	105617	NO_2	N	N/A	3.8	No	2.55
157	Opposite Column2 Church Street (Cs-OCol2)	Kerbside	464471	101099	NO_2	Close to AQMA11	N/A	1	No	2.63
158	Column 106 Eastern Road (ER-Col106)	Roadside	467322	103333	NO_2	N	N/A	3.07	No	2.65
159	Column 107 Eastern Road (ER-Col107)	Roadside	467357	103337	NO_2	N	N/A	1.12	No	2.7
162	Column 51 Eastern Road (ER-Col51)	Roadside	467441	104208	NO_2	N	N/A	2.64	No	2.48
163	Column 52 Eastern Road (ER-Col52)	Roadside	467423	104211	NO_2	N	N/A	2.1	No	2.48
164	Column 2 Allaway Avenue (AA-Col2)	Kerbside	464707	105787	NO_2	N	10.30 m	1.18	No	2.43
165	Column 3 Allaway Avenue (AA-Col3)	Roadside	464716	105817	NO_2	N	7.37 m	0.55	No	2.52
166	Column 2 Anchorage Road (AR-Col2)	Roadside	467269	103292	NO_2	N	N/A	1.65	No	2.7
167	Column 11 Church Street (CS-Col11)	Roadside	464589	100962	NO_2	N	7.61 m	1.66	No	2.44

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
168	Column 15 Copnor Road (CR-Col15)	Kerbside	465798	103856	NO_2	N	23.94 m	0.68	No	2.6
169	Column 16 Copnor Road (CR-Col16)	Kerbside	465809	103870	NO_2	N	17.85 m	0.84	No	2.55
170	Column 3 Commercial Road (ComR-Col3)	Roadside	464454	101044	NO_2	AQMA11	N/A	3.59	No	2.65
171	Column 4 Commercial Road (ComR-Col4)	Roadside	464423	101047	NO_2	AQMA11	N/A	2	No	2.4
172	Column 11 Hope Street (HS-Col11)	Roadside	464365	101038	NO_2	N	N/A	2	No	2.43
173	Column 5 Fratton Road (FR-Col5)	Roadside	465161	100081	NO_2	AQMA6	2.12m	0.58	No	2.56
174	Column 12 Church Street (CS-Col12)	Roadside	464606	100961	NO_2	N	N/A	1.35	No	2.53
175	Column 2 Church Street (CS-Col2)	Roadside	464478	101110	NO_2	Close to AQMA11	N/A	1.72	No	2.65
176	Column 3 Anchorage Road (AR-Col3)	Roadside	467269	103275	NO_2	N	N/A	1.78	No	2.65
178	Copnor Road- Column3 Opposite Walbrant Building (CR- Col3(OPWB)	Kerbside	465679	103987	NO_2	N	21.00 m	1.12	No	2.2
179	Building on eastern side of Junction Southampton Road/ Allaway	Roadside	464735	105784	NO_2	N	On the Façade	9	No	2.27

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
	Avenue Junction (AAOB)									
181	Trafalgar Gate Column 3 (TG-Col3)	Kerbside	464299	101324	NO_2	AQMA11	N/A	2.69	No	2.62
182	Trafalgar Gate Column 4 (TG-Col4)	Kerbside	464289	101338	NO_2	AQMA11	N/A	2.09	No	2.58
183	Flathouse Road Column2 (FR-Col2)	Kerbside	464222	101346	NO_2	Close to AQMA11	N/A	1.79	No	2.38
184	Flathouse Road Opposite Column2 (FR-OCol2)	Roadside	464211	101346	NO_2	Close to AQMA11	N/A	1.83	No	2.23
185	42 Tudor Crescent (TC-42)	Roadside	465976	104576	NO_2	N	On the Façade	24.5	No	1.84
188	Kettering Terrace-Normans House Column5 (KT-NHCol5)	Kerbside	464390	101510	NO_2	Close to AQMA11	N/A	1.22	No	2.23
189	Kettering Terrace-Normans House Column10 (KT-NHCol10)	Kerbside	464386	101532	NO_2	Close to AQMA11	N/A	1.55	No	2.37
190	Prospect Road Column2 (PR-Col2)	Roadside	464292	101382	NO_2	Close to AQMA11	N/A	0.43	No	2.54
191	Prospect Road Column3 (PR-Col3)	Roadside	464267	101401	NO_2	Close to AQMA11	N/A	2.56	No	2.56

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
192	58 Kingston Road Shirin Kebab (KR-SK)	Roadside	465114	101370	NO_2	AQMA6	On the Façade	2.25	No	2.35
193	Goldsmith Avenue- Front Garden (GA-FG)	Roadside	465297	100005	NO_2	N	1.20 m	3.12	No	2.02
194	48 New Road (NR-48)	Roadside	465138	101343	NO_2	Close to AQMA6	On the Façade	1.8	No	2.55
213	Kingston Road Column 4 (KR-Col4)	Kerbside	465104	101319	NO_2	AQMA6	1.84 m	0.39	No	2.52
214	Anglesea Road- Opp Defra station	Kerbside	463808	100232	NO_2	N	N/A	0.6	No	2.4
217	Arundel Street- Column 18 (AS-Col18)	Kerbside	465089	100462	NO_2	N	N/A	0.43	No	2.59
218	Arundel Street- Opposite Column 18 (AS-OpCol18)	Kerbside	465091	100452	NO_2	N	1.50 m	0.53	No	2.53
220	Continental Ferry Port- Column 2 (CFP-Col2)	Kerbside	464404	101962	NO_2	AQMA11	N/A	1.06	No	2.35
221	Continental Ferry Port- Column 3 (CFP-Col3)	Roadside	464419	101931	NO_2	AQMA11	N/A	1.8	No	2.57
222	Column 10, Cross from United	Roadside	464409	100929	NO_2	AQMA11	N/A	2.62	No	2.52

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
	Friendly Commercial Road.									
223	Chichester Road-Column2 (CR-Col2)	Roadside	464970	101970	NO_2	N	1.51 m	1.5	No	2.68
224	Chichester Road-Column3 (CR-Col3)	Roadside	464992	101983	NO_2	N	3.16 m	1.39	No	2.58
225	Elm Grove-Column 6 (EG-Col6)	Kerbside	464407	99352	NO_2	N	3.51 m	0.53	No	2.53
226	Elm Grove-Column 7 (EG-Col7)	Kerbside	464384	99347	NO_2	N	2.18 m	0.65	No	2.53
227	Eastern Road-Column 118 (ER-Col118)	Kerbside	467389	103185	NO_2	N	N/A	1.62	No	2.68
228	Eastern Road-Column 119 (ER-Col119)	Kerbside	467358	103189	NO_2	N	N/A	1.83	No	2.68
229	Eastern Road-Column 59 (ER-Col59)	Roadside	467429	104140	NO_2	N	N/A	2.62	No	2.64
230	Eastern Road-Column 60 (ER-Col60)	Roadside	467411	104143	NO_2	N	N/A	2.1	No	2.63
231	Fratton Road-Column 18 (FR-Col18)	Roadside	465129	100404	NO_2	AQMA6	4.37 m	2.3	No	2.59
232	Fratton Road-Column 23 (FR-Col23)	Kerbside	465114	100529	NO_2	AQMA6	N/A	0.54	No	2.43

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
233	Fratton Road - Column31 (FR-Col31)	Roadside	465113	100745	NO_2	AQMA6	1.80 m	2.15	No	2.66
234	Fratton Road - Column32 (FR-Col32)	Roadside	465131	100771	NO_2	AQMA6	N/A	2.32	No	3.08
235	Fratton Road - Column 6 (FR-Col6)	Kerbside	465148	100107	NO_2	AQMA6	8.77 m	2.8	No	2.66
236	Fratton Road- Opposite Column 18 (FR-OpCol18)	Kerbside	465143	100404	NO_2	AQMA6	3.22 m	0.54	No	2.58
237	Fratton Road- Opposite Column 23 (FR-OpCol23)	Kerbside	465127	100526	NO_2	AQMA6	1.04 m	0.81	No	2.42
238	Goldsmith Avenue- Column 20 (GA-Col20)	Kerbside	466060	99826	NO_2	N	20.66 m	0.49	No	2.43
239	Goldsmith Avenue- Column 21 (GA-Col21)	Kerbside	466056	99838	NO_2	N	4.00 m	0.5	No	2.7
240	Gladys Avenue- Column 4 (GA-Col4)	Roadside	464906	102439	NO_2	N	1.87 m	1.69	No	2.56
241	Goldsmith Avenue- Column 6 (GA-Col6)	Roadside	466467	99627	NO_2	N	7.37 m	0.59	No	2.73
242	Goldsmith Avenue- Column 7 (GA-Col7)	Roadside	466453	99649	NO_2	N	N/A	0.8	No	2.7

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) [(1)]	Distance to kerb of nearest road (m) [(2)]	Tube Co-located with a Continuous Analyser?	Tube Height (m)
243	Gunwharf Road Column 11 (GwR-Col11)	Roadside	463205	99608	NO_2	N	N/A	0.55	No	2.68
244	Gunwharf Road-Opposite Column 4 (GwR-OpCol4)	Kerbside	463266	99799	NO_2	N	N/A	0.93	No	2.59
245	Half Moon Street-Bus stop (by The Ship and Castle(PH) (HMS-BS)	Kerbside	463047	100329	NO_2	AQMA12	9:58 m	0.5	No	2.77
246	Half Moon Street-Column 39 -Cross from The Ship and Castle(PH) (HMS-Col39)	Kerbside	463053	100361	NO_2	AQMA12	N/A	0.9	No	2.67
247	Holbrook Road-Column 42 (HR-Col42)	Roadside	464929	100133	NO_2	N	N/A	1.54	No	2.56
248	Holbrook Road-Column 44 (HR-Col44)	Roadside	464929	100066	NO_2	N	N/A	1.5	No	2.57
249	Holbrook Road-Column 20 (HR-Col20)	Roadside	464858	100537	NO_2	N	35.77 m	1.75	No	2.57

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
250	Holbrook Road- Opposite Column 20 (HR-OpCol20)	Roadside	464850	100523	NO_2	N	on fence of school playground	2.58	No	2.54
251	Column 10 Hope Street (HS-Col10)	Roadside	464345	101022	NO_2	N	N/A	1.6	No	2.14
252	Hope Street- Column 3	Kerbside	464192	100895	NO_2	N	N/A	1.9	No	2.3
253	High Street- Column 6 (HS-Col6)	Kerbside	463482	99523	NO_2	N	1.90 m	0.33	No	2.55
254	High Street- Column 7 (HS-Col7)	Kerbside	463478	99506	NO_2	N	1.50 m	0.64	No	2.5
255	Cross from Hope Street Column 10	Roadside	464311	101021	NO_2	N	N/A	4	No	2.15
256	Hampshire Terrace- Column 6 (HT-Col6)	Kerbside	463832	99761	NO_2	N	3.55 m	0.9	No	2.4
257	Hampshire Terrace- Opposite Column 6 (HT-OpCol6)	Kerbside	463819	99763	NO_2	N	N/A	0.5	No	2.72
258	Kingston Crescent- Column 12 (KC-Col12)	Kerbside	464970	101961	NO_2	N	N/A	0.92	No	2.6
259	Kingston Crescent- Column 13 (KC-Col13)	Kerbside	464559	101941	NO_2	N	N/A	1.39	No	2.48

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
260	Kingston Crescent-Column 4 Cross from Vanguard House (KC-Col4)	Kerbside	464784	101939	NO_2	N	10.70 m	2.13	No	2.45
261	Kingston Crescent-Front off Vanguard House (KC-FVH)	Roadside	464772	101924	NO_2	N	1.20 m	4.2	No	2.6
262	Kingston Road-Column11 (KR-Col11)	Kerbside	465049	101552	NO_2	Close to AQMA6 and AQMA11	1.80 m	0.6	No	2.66
263	Kingston Road-Opposite Column11 (KR-OpCol11)	Kerbside	465046	101536	NO_2	Close to AQMA6 and AQMA11	0.94 m	0.46	No	2.62
264	Lord Montgomery Way-Column1 (LMW-Col1)	Kerbside	463860	99861	NO_2	N	1.31 m	0.84	No	2.36
265	Lord Montgomery Way-Opposite Column1 (LMW-OpCol1)	Kerbside	463855	99871	NO_2	AQMA7	18.88 m	0.96	No	2.44
266	London Road-Column 23 at Bus stop (LR-OpCol23)	Kerbside	464966	102417	NO_2	Close to AQMA6	3.43 m	0.6	No	2.6
267	London Road-Opposite Column 23 at Bus stop (LR-OpCol23)	Kerbside	464968	102420	NO_2	Close to AQMA6	N/A	0.72	No	2.43

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
268	Mile End Rd - Market Tavern Column 66A (MER-MT Col 66A)	Roadside	464465	101452	NO_2	AQMA11	N/A	7	No	2.63
269	Museum Road- Camera Column (MR-CCol)	Kerbside	463750	99507	NO_2	N	3.09 m	0.7	No	2.63
270	Museum Road- Column 3 (MR-Col3)	Kerbside	463753	99522	NO_2	N	N/A	0.46	No	2.64
271	Column 2 Market Way (MW-Col2)	Kerbside	464337	100810	NO_2	N	N/A	0.7	No	2.4
272	Opposite Column 2 Market Way, MW-Opp Col2	Kerbside	464324	100830	NO_2	N	7.49 m	1.49	No	2.39
273	London Road- Column 2 (OLR-Col2)	Kerbside	465691	103860	NO_2	N	6.94 m	0.53	No	2.5
277	Stubbington Avenue-Column 2 (SA-Col2)	Kerbside	465013	102342	NO_2	N	N/A	0.5	No	2.66
278	Stubbington Avenue-Opposite Column 2 (SA-OpCol2)	Kerbside	465025	102353	NO_2	N	7.32 m	2.6	No	2.66
279	Saint George Road-Column 4 (StG-Col4)	Kerbside	463477	99670	NO_2	N	2.67 m	1	No	2.6
280	Saint George Road-Column 5 (StG-Col5)	Kerbside	463491	99681	NO_2	N	N/A	0.8	No	2.24

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
281	Twyford Avenue- Cross from Stamshaw Road- Bus stop (TA-OS)	Kerbside	464540	102065	NO_2	N	N/A	0.78	No	2.26
282	Velder Avenue- Column 5 (VA-Col5)	Kerbside	466444	100251	NO_2	AQMA9	N/A	0.65	No	2.6
283	Velder Avenue- Column 6 (VA-Col6)	Kerbside	466439	100266	NO_2	AQMA9	1.14 m	0.43	No	2.66
284	Victoria Road North-Column 28 (VRN-Col28)	Kerbside	464861	99519	NO_2	N	4.18 m	1.34	No	2.61
285	Victoria Road North-Column 29 (VRN-Col29)	Roadside	464839	99523	NO_2	N	2m	1.84	No	2.57
286	Victoria Road North- Column 36 (VRN-Col36)	Roadside	464759	99308	NO_2	N	4.96 m	1.81	No	2.67
287	Victoria Road North-North (VRN-N)	Roadside	465082	99963	NO_2	N	5.57 m	2.56	No	2.36
288	Victoria Road North-Opposite Column 19 (VRN-OpCol19)	Kerbside	464961	99772	NO_2	N	13.07 m	1.74	No	2.71
289	Victoria Road North-South (VRN-S)	Kerbside	465064	99934	NO_2	N	6.94 m	1.45	No	2.46
290	Winston Churchill Avenue- North (WCA-N)	Kerbside	464835	99901	NO_2	N	N/A	1.07	No	2.3

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
291	Winston Churchill Avenue- South (WCA-S)	Roadside	464832	99885	NO_2	N	17.14 m	1	No	2.5
292	Stamshaw Road- Bus stop (SR-BS)	Kerbside	464554	102051	NO_2	N	12.98 m	0.84	No	2.17

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g., installed on the façade of a residential property).

(2) N/A if not applicable.

Table A.3 – Annual Mean NO_2 Monitoring Results: Automatic Monitoring (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
C2	464925	102129	Kerbside	73.85%	73.85%	**40.46**	32.66	29.29	32.08	30.36
C4	465403	103952	Urban background	98.32%	98.32%	17.47	17.37	16.30	14.87	15.01
C6	466004	102348	Roadside	98.67%	98.67%	31.12	26.70	22.87	27.07	23.53
C7	464397	101270	Roadside	99.14%	99.14%	32.44	26.57	34.83	26.73	25.14
C8	463835	100259	Roadside	99.27%	99.27%	27.80	21.29	21.30	23.31	25.97
C9	463933	100509	Roadside	73.66%	73.66%				**43.45**	37.70

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16**

☒ **Reported concentrations are those at the location of the monitoring site (annualised, as required), i.e., prior to any fall-off with distance correction.**

Notes:

The Annual Mean concentrations are presented as µg/m³.

Exceedances of the NO_2 Annual Mean objective of 40µg/m³ are shown in **bold**.

All means have been "annualised" as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g., if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Table A.4 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring ($\mu g/m^3$)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
1	463872	99874	Roadside	100.00%	100.00%	36.92	29.67	31.64	33.46	31.19
2	463705	99371	Urban background	100.00%	100.00%	14.96	12.95	14.30	14.56	13.72
3	463408	99460	Roadside	100.00%	100.00%	21.02	18.29	18.80	19.46	18.73
4	463190	100390	Roadside	100.00%	100.00%	31.20	27.15	27.67	26.94	25.90
5	464230	102194	Roadside	91.67%	91.67%	24.86	22.28	22.34	25.22	21.19
6	464331	102197	Roadside	100.00%	100.00%	30.18	21.85	23.31	25.15	25.12
7	464291	102279	Urban background	100.00%	100.00%	23.29	22.73	22.00	22.35	21.65
8	466690	104355	Urban background	91.67%	91.67%	23.18	21.74	21.20	20.36	21.10
9	465621	105528	Roadside	100.00%	100.00%	33.60	29.72	29.98	29.90	29.61
10	467107	104850	Urban background	100.00%	100.00%	15.08	14.39	13.54	13.46	14.28

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
11	466869	103457	Roadside	100.00%	100.00%	20.70	18.80	20.99	20.00	18.59
14	466109	103736	Roadside	100.00%	100.00%	19.54	17.00	17.53	17.57	17.41
15	466120	101324	Roadside	100.00%	100.00%	24.91	21.16	24.46	22.97	21.58
16	465474	104205	Roadside	50.00%	50.00%	25.44	20.94	23.10	25.10	23.56
18	466097	101332	Roadside	100.00%	100.00%	24.32	22.77	22.27	22.02	22.73
19	466392	100226	Roadside	100.00%	100.00%	33.38	28.59	29.92	29.40	27.92
20	466712	99415	Roadside	100.00%	100.00%	24.01	21.79	22.71	22.01	21.64
21	465209	98964	Roadside	100.00%	100.00%	33.41	28.44	29.03	29.09	29.17
22	464778	99306	Roadside	100.00%	100.00%	24.49	21.96	23.08	24.10	21.40
23	464974	99766	Roadside	100.00%	100.00%	32.20	27.30	31.60	28.40	26.37
24	465111	100737	Roadside	100.00%	100.00%	31.30	28.70	30.65	29.28	28.46
25	465036	101547	Roadside	91.67%	91.67%	37.63	30.62	31.84	31.94	29.29
26	464900	101976	Kerbside	75.00%	75.00%	**40.42**	36.51	36.30	35.69	33.61

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
30	464478	101457	Roadside	91.67%	91.67%	34.29	28.20	29.24	31.39	29.95
34	464425	100893	Roadside	100.00%	100.00%	31.01	25.26	25.19	27.93	25.97
35	463837	99759	Roadside	91.67%	91.67%	26.92	21.36	23.64	25.98	22.99
36	464501	99329	Roadside	83.33%	83.33%	27.01	20.88	25.16	24.74	24.50
42	464552	101940	Roadside	100.00%	100.00%	32.46	28.41	28.56	29.01	28.47
43	464774	101922	Urban background	100.00%	100.00%	30.30	27.70	28.27	28.69	28.26
44	464336	100833	Roadside	91.67%	91.67%	32.35	27.49	26.74	27.82	26.47
45	464344	100808	Roadside	100.00%	100.00%	31.84	27.61	28.64	30.45	29.00
46	464339	101273	Roadside	100.00%	100.00%	33.87	28.86	31.18	35.28	29.68
47	464586	102125	Roadside	100.00%	100.00%	31.07	27.87	29.86	29.08	28.27
48	464597	102119	Urban background	83.33%	83.33%	25.32	29.29	24.81	25.34	25.09
49	463042	100315	Urban background	100.00%	100.00%	29.05	22.17	23.90	25.23	23.97
50	463388	100398	Roadside	100.00%	100.00%	34.07	24.70	28.29	29.78	29.87

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
51	463333	100395	Urban background	100.00%	100.00%	28.92	23.12	24.53	26.78	25.08
52	463235	100412	Roadside	100.00%	100.00%	27.77	23.50	25.22	25.02	24.48
55	463224	99590	Roadside	100.00%	100.00%	26.17	19.57	23.30	23.14	22.20
56	463261	99782	Roadside	100.00%	100.00%	30.44	24.78	28.36	28.12	27.85
58	463487	99659	Roadside	91.67%	91.67%	26.93	20.74	22.21	22.10	22.32
59	466263	100334	Roadside	100.00%	100.00%	37.11	31.53	36.46	32.78	29.58
60	466201	100478	Roadside	91.67%	91.67%	25.16	23.81	22.44	20.31	21.31
61	466136	100610	Roadside	91.67%	91.67%	30.28	23.76	27.08	25.30	25.03
62	466165	100573	Roadside	100.00%	100.00%	17.56	16.78	16.48	16.50	14.65
63	466354	100172	Roadside	100.00%	100.00%	29.43	23.83	26.26	25.96	25.27
64	466326	100165	Roadside	91.67%	91.67%	30.33	26.43	28.76	28.27	27.73
65	466681	100373	Roadside	91.67%	91.67%	24.35	20.79	25.48	21.91	23.70
66	466267	100216	Roadside	100.00%	100.00%	27.60	23.33	25.56	24.98	25.16

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
67	466457	100253	Roadside	91.67%	91.67%	31.44	25.54	28.94	27.74	26.96
68	466501	100277	Roadside	100.00%	100.00%	29.25	24.71	28.45	27.77	26.97
69	466396	100248	Roadside	75.00%	75.00%	24.95	23.68	26.55	25.18	22.62
70	466667	99546	Roadside	83.33%	83.33%	21.58	19.59	24.08	21.35	19.59
71	465711	105624	Kerbside	100.00%	100.00%	25.19	21.97	23.08	22.18	23.14
72	465657	105577	Roadside	100.00%	100.00%	23.33	19.33	20.73	20.85	21.09
73	465653	105544	Roadside	100.00%	100.00%	23.78	20.24	22.04	21.09	21.19
74	465610	105383	Roadside	100.00%	100.00%	30.25	30.72	27.28	25.45	26.30
75	465618	105619	Roadside	100.00%	100.00%	21.25	20.19	20.43	20.60	19.13
76	466002	102053	Roadside	100.00%	100.00%	28.87	23.55	25.14	25.36	24.31
77	466008	102097	Roadside	83.33%	83.33%	18.51	19.01	17.79	19.72	19.36
78	466523	99599	Roadside	100.00%	100.00%	19.91	17.88	21.30	19.72	20.01
80	465204	98978	Urban background	91.67%	91.67%	32.36	23.99	28.29	29.79	28.37

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
81	465278	98968	Roadside	100.00%	100.00%	30.66	22.31	25.73	25.79	25.19
82	465178	98945	Roadside	100.00%	100.00%	26.61	22.15	24.84	24.71	23.24
83	465166	98982	Roadside	100.00%	100.00%	28.50	21.13	25.04	27.31	25.62
84	465198	98996	Roadside	100.00%	100.00%	30.40	23.81	29.03	31.02	26.83
85	465150	98968	Urban background	100.00%	100.00%	31.52	25.06	28.11	28.68	28.04
86	465201	99734	Roadside	100.00%	100.00%	24.00	24.33	22.80	22.70	21.94
87	465183	99904	Roadside	100.00%	100.00%	24.80	20.23	21.60	22.16	21.18
88	465186	98996	Urban background	100.00%	100.00%	28.43	27.25	28.95	27.58	27.35
89	465190	98946	Urban background	100.00%	100.00%	25.97	20.54	24.91	25.13	23.83
90	466095	100813	Urban background	100.00%	100.00%	22.13	18.23	18.92	18.86	18.80
91	466070	100819	Urban background	100.00%	100.00%	23.84	21.54	21.68	22.31	20.92
92	466525	99736	Roadside	100.00%	100.00%	25.70	19.26	21.11	21.16	20.75
93	464826	99500	Roadside	100.00%	100.00%	34.81	30.46	27.68	26.90	25.07

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
96	465465	98937	Urban background	58.33%	58.33%	21.48	18.90	19.62	19.47	21.91
97	465896	99852	Roadside	91.67%	91.67%	22.64	17.86	20.39	20.34	18.78
98	466700	100591	Roadside	100.00%	100.00%	18.19	17.10	17.19	18.81	17.56
99	466727	100572	Roadside	100.00%	100.00%	20.29	18.98	18.94	18.46	18.35
100	467783	105677	Roadside	100.00%	100.00%	19.94	15.19	19.57	19.14	17.71
101	467693	105687	Roadside	100.00%	100.00%	25.00	22.21	23.58	21.55	22.77
102	464585	105714	Roadside	100.00%	100.00%	23.71	21.86	24.34	21.52	21.05
103	465556	103968	Roadside	100.00%	100.00%	23.04	18.16	18.59	19.07	17.58
108	464951	102418	Roadside	100.00%	100.00%	32.46	31.38	30.59	29.37	29.15
109	464961	102383	Roadside	75.00%	75.00%	30.11	26.00	26.84	26.57	25.18
110	464913	102419	Roadside	100.00%	100.00%	22.15	22.35	21.73	22.95	22.78
111	464898	102414	Roadside	100.00%	100.00%	24.60	21.53	21.45	21.04	20.38
117	463901	100508	Roadside	100.00%	100.00%	**48.00**	**41.04**	**42.97**	**48.54**	**42.79**

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
118	463951	100531	Roadside	100.00%	100.00%	**52.52**	38.76	**41.66**	**45.90**	**43.72**
119	464098	100748	Kerbside	100.00%	100.00%	30.67	24.69	28.06	27.52	28.02
120	464086	100765	Roadside	91.67%	91.67%	**46.90**	36.30	35.31	**44.88**	35.73
121	464930	102071	Roadside	100.00%	100.00%	38.55	32.49	34.34	34.76	33.87
122	464918	102090	Roadside	100.00%	100.00%	36.76	30.77	32.20	32.23	31.20
124	462491	106553	Roadside	91.67%	91.67%	26.07	23.83	24.18	24.52	25.44
125	465624	104626	Roadside	100.00%	100.00%	27.88	30.05	23.16	26.10	25.44
126	463756	105253	Roadside	91.67%	91.67%	38.66	27.03	26.74	27.62	26.81
127	463536	105652	Roadside	100.00%	100.00%	28.44	23.96	25.23	25.37	25.03
128	464710	102222	Roadside	91.67%	91.67%	23.39	21.54	21.72	22.02	20.76
129	464711	102239	Roadside	100.00%	100.00%	23.18	21.11	22.30	22.39	22.65
130	464986	102344	Kerbside	83.33%	83.33%	35.80	36.15	28.60	27.97	29.02
131	464925	101969	Roadside	58.33%	58.33%	33.16	27.28	30.45	28.54	32.37

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
132	466344	100139	Roadside	100.00%	100.00%	39.36	31.62	33.83	35.42	30.75
133	464882	100475	Roadside	83.33%	83.33%	35.73	30.65	36.00	30.44	23.72
135	464526	105665	Kerbside	100.00%	100.00%	25.73	23.62	24.92	27.69	24.15
136	464512	105641	Roadside	100.00%	100.00%	26.67	25.35	27.48	25.20	27.90
137	464082	105658	Roadside	91.67%	91.67%	35.42	30.67	36.11	36.39	35.21
138	464067	105633	Kerbside	91.67%	91.67%	38.31	25.68	27.63	27.54	24.83
139	463938	105638	Roadside	91.67%	91.67%	33.74	26.20	28.19	30.71	29.05
143	465686	103868	Roadside	100.00%	100.00%	33.35	22.92	26.59	29.33	25.91
144	465665	103832	Kerbside	100.00%	100.00%	**40.81**	29.88	32.96	31.61	29.65
145	464259	100965	Kerbside	100.00%	100.00%	**53.91**	**43.59**	**44.63**	**48.47**	**42.51**
146	465265	105807	Roadside	100.00%	100.00%	26.69	19.73	19.01	19.69	19.21
147	465303	105817	Roadside	100.00%	100.00%	26.17	22.51	20.27	21.70	22.45
148	464670	105713	Roadside	100.00%	100.00%	24.19	21.25	26.51	25.35	27.09

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
149	464665	105737	Roadside	100.00%	100.00%	33.93	27.93	27.53	29.33	27.72
150	464791	105775	Roadside	100.00%	100.00%	37.46	30.57	32.08	32.67	30.68
151	464806	105751	Roadside	91.67%	91.67%	31.83	24.81	24.81	25.07	25.71
152	465169	105763	Roadside	100.00%	100.00%	**41.97**	35.79	32.64	36.41	34.81
153	465173	105784	Kerbside	91.67%	91.67%	36.31	27.23	27.64	27.05	31.77
154	465337	105726	Roadside	100.00%	100.00%	**43.04**	32.10	31.94	32.24	33.74
155	465350	105748	Roadside	100.00%	100.00%	35.76	27.42	29.99	30.00	31.08
156	463936	105617	Roadside	100.00%	100.00%	35.80	25.50	28.11	28.38	26.04
157	464471	101099	Kerbside	100.00%	100.00%	37.33	28.03	27.99	29.87	27.06
158	467322	103333	Roadside	91.67%	91.67%	33.96	27.80	32.09	35.95	30.51
159	467357	103337	Roadside	100.00%	100.00%	39.16	34.23	33.93	34.70	33.04
162	467441	104208	Roadside	100.00%	100.00%	**45.25**	32.68	39.70	36.98	37.04
163	467423	104211	Roadside	100.00%	100.00%	38.56	30.45	35.07	36.67	34.50

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
164	464707	105787	Kerbside	100.00%	100.00%	34.57	26.70	28.54	30.18	28.12
165	464716	105817	Roadside	100.00%	100.00%	30.25	26.97	26.87	26.41	24.93
166	467269	103292	Roadside	100.00%	100.00%	34.71	29.47	28.11	29.76	28.73
167	464589	100962	Roadside	100.00%	100.00%	29.01	27.63	27.66	27.99	26.65
168	465798	103856	Kerbside	100.00%	100.00%	27.62	22.53	27.82	28.32	26.58
169	465809	103870	Kerbside	100.00%	100.00%	32.66	32.35	33.72	32.93	31.83
170	464454	101044	Roadside	100.00%	100.00%	**41.50**	30.72	27.91	30.74	27.70
171	464423	101047	Roadside	100.00%	100.00%	31.33	23.07	24.18	25.77	22.94
172	464365	101038	Roadside	91.67%	91.67%	38.77	27.90	27.69	29.88	29.17
173	465161	100081	Roadside	100.00%	100.00%	**41.88**	33.17	36.49	33.80	31.97
174	464606	100961	Roadside	100.00%	100.00%	31.30	25.71	24.64	24.22	23.71
175	464478	101110	Roadside	100.00%	100.00%	37.55	32.42	32.32	31.49	31.41
176	467269	103275	Roadside	91.67%	91.67%	29.41	25.50	28.72	29.66	25.51

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
178	465679	103987	Kerbside	91.67%	91.67%		29.98	32.33	33.16	30.75
179	464735	105784	Roadside	100.00%	100.00%		24.21	26.23	24.91	25.12
181	464299	101324	Kerbside	100.00%	100.00%		24.33	24.60	26.02	24.08
182	464289	101338	Kerbside	91.67%	91.67%		30.04	30.28	27.94	26.71
183	464222	101346	Kerbside	100.00%	100.00%		26.44	24.72	25.12	22.72
184	464211	101346	Roadside	100.00%	100.00%		24.23	24.71	24.38	22.39
185	465976	104576	Roadside	100.00%	100.00%		20.92	20.15	22.91	21.74
188	464390	101510	Kerbside	100.00%	100.00%		27.40	25.75	25.17	23.58
189	464386	101532	Kerbside	100.00%	100.00%		28.49	25.27	26.67	24.65
190	464292	101382	Roadside	83.33%	83.33%		27.73	25.69	25.81	24.54
191	464267	101401	Roadside	75.00%	75.00%		27.23	24.87	26.33	25.70
192	465114	101370	Roadside	100.00%	100.00%		27.61	33.90	37.30	31.01
193	465297	100005	Roadside	100.00%	100.00%		25.18	30.30	29.26	29.53

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
194	465138	101343	Roadside	100.00%	100.00%		26.66	33.36	33.67	30.26
213	465104	101319	Kerbside	91.67%	91.67%		34.09	38.41	40.00	38.53
214	463808	100232	Kerbside	91.67%	91.67%			33.53	35.56	33.22
217	465089	100462	Kerbside	100.00%	100.00%			30.41	29.40	27.30
218	465091	100452	Kerbside	100.00%	100.00%			34.82	33.21	32.08
220	464404	101962	Kerbside	100.00%	100.00%			34.52	34.63	35.54
221	464419	101931	Roadside	100.00%	100.00%			30.39	30.45	29.69
222	464409	100929	Roadside	83.33%	83.33%			27.47	28.59	25.67
223	464970	101970	Roadside	100.00%	100.00%			29.64	28.42	27.50
224	464992	101983	Roadside	100.00%	100.00%			28.04	24.98	25.60
225	464407	99352	Kerbside	91.67%	91.67%			29.13	27.31	25.72
226	464384	99347	Kerbside	100.00%	100.00%			26.44	27.12	25.32
227	467389	103185	Kerbside	100.00%	100.00%			38.29	33.94	32.88

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
228	467358	103189	Kerbside	100.00%	100.00%			28.36	27.72	27.36
229	467429	104140	Roadside	100.00%	100.00%			**41.80**	35.69	34.18
230	467411	104143	Roadside	100.00%	100.00%			33.41	34.57	32.10
231	465129	100404	Roadside	100.00%	100.00%			30.50	28.84	26.53
232	465114	100529	Kerbside	100.00%	100.00%			**40.77**	34.95	33.81
233	465113	100745	Roadside	100.00%	100.00%			39.30	30.80	33.48
234	465131	100771	Roadside	100.00%	100.00%			26.42	29.89	21.73
235	465148	100107	Kerbside	91.67%	91.67%			30.97	27.31	25.92
236	465143	100404	Kerbside	100.00%	100.00%			33.37	33.50	33.32
237	465127	100526	Kerbside	83.33%	83.33%			29.08	30.36	27.52
238	466060	99826	Kerbside	100.00%	100.00%			26.17	24.23	23.62
239	466056	99838	Kerbside	100.00%	100.00%			28.08	25.19	24.47
240	464906	102439	Roadside	100.00%	100.00%			23.92	22.93	22.08

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
241	466467	99627	Roadside	100.00%	100.00%			25.27	24.04	24.98
242	466453	99649	Roadside	100.00%	100.00%			22.58	19.94	19.12
243	463205	99608	Roadside	100.00%	100.00%			22.08	26.80	25.30
244	463266	99799	Kerbside	100.00%	100.00%			24.48	25.37	24.57
245	463047	100329	Kerbside	100.00%	100.00%			26.88	27.48	26.08
246	463053	100361	Kerbside	91.67%	91.67%			30.80	32.62	30.69
247	464929	100133	Roadside	100.00%	100.00%			31.76	30.48	28.20
248	464929	100066	Roadside	100.00%	100.00%			31.02	30.76	29.38
249	464858	100537	Roadside	100.00%	100.00%			30.22	28.22	26.24
250	464850	100523	Roadside	100.00%	100.00%			23.65	26.46	23.86
251	464345	101022	Roadside	100.00%	100.00%			30.18	31.94	30.49
252	464192	100895	Kerbside	100.00%	100.00%			29.33	27.26	29.55
253	463482	99523	Kerbside	100.00%	100.00%			22.55	22.58	22.68

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
254	463478	99506	Kerbside	100.00%	100.00%			23.85	22.55	21.91
255	464311	101021	Roadside	100.00%	100.00%			29.75	31.58	28.70
256	463832	99761	Kerbside	100.00%	100.00%			28.20	30.14	28.30
257	463819	99763	Kerbside	100.00%	100.00%			24.47	23.14	22.52
258	464970	101961	Kerbside	100.00%	100.00%			32.84	30.65	30.23
259	464559	101941	Kerbside	100.00%	100.00%			35.75	32.49	31.98
260	464784	101939	Kerbside	91.67%	91.67%			34.85	33.62	35.60
261	464772	101924	Roadside	100.00%	100.00%			31.65	28.94	30.06
262	465049	101552	Kerbside	100.00%	100.00%			37.00	34.89	31.68
263	465046	101536	Kerbside	100.00%	100.00%			34.49	34.44	33.16
264	463860	99861	Kerbside	100.00%	100.00%			34.06	33.86	33.09
265	463855	99871	Kerbside	100.00%	100.00%			25.23	27.62	24.68
266	464966	102417	Kerbside	100.00%	100.00%			28.72	27.21	27.93

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
267	464968	102420	Kerbside	100.00%	100.00%			38.86	36.05	33.70
268	464465	101452	Roadside	100.00%	100.00%			38.11	33.59	32.75
269	463750	99507	Kerbside	100.00%	100.00%			22.44	23.65	22.03
270	463753	99522	Kerbside	100.00%	100.00%			22.79	21.35	20.82
271	464337	100810	Kerbside	100.00%	100.00%			25.75	27.77	24.78
272	464324	100830	Kerbside	100.00%	100.00%			31.43	33.51	31.06
273	465691	103860	Kerbside	100.00%	100.00%			38.50	37.70	34.62
277	465013	102342	Kerbside	100.00%	100.00%			32.17	27.66	28.78
278	465025	102353	Kerbside	91.67%	91.67%			29.73	26.22	26.43
279	463477	99670	Kerbside	100.00%	100.00%			25.42	24.42	24.41
280	463491	99681	Kerbside	100.00%	100.00%			25.63	24.06	24.32
281	464540	102065	Kerbside	100.00%	100.00%			27.31	28.05	29.79
282	466444	100251	Kerbside	100.00%	100.00%			37.09	35.56	34.82

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
283	466439	100266	Kerbside	100.00%	100.00%			29.67	24.91	23.42
284	464861	99519	Kerbside	100.00%	100.00%			27.56	25.13	24.60
285	464839	99523	Roadside	100.00%	100.00%			31.79	27.56	27.43
286	464759	99308	Roadside	100.00%	100.00%			33.25	30.25	28.46
287	465082	99963	Roadside	100.00%	100.00%			21.35	20.62	19.72
288	464961	99772	Kerbside	100.00%	100.00%			31.71	27.20	26.85
289	465064	99934	Kerbside	100.00%	100.00%			29.04	25.63	22.55
290	464835	99901	Kerbside	100.00%	100.00%			22.83	21.61	21.67
291	464832	99885	Roadside	100.00%	100.00%			22.37	22.51	22.12
292	464554	102051	Kerbside	100.00%	100.00%			28.31	31.76	34.94

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.**

☒ **Diffusion tube data has been bias adjusted.**

☒ **Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e., prior to any fall-off with distance correction.**

Notes:

The Annual Mean concentrations are presented as µg/m^3.

Exceedances of the NO_2 Annual Mean objective of 40µg/m^3 are shown in **bold**.

NO_2 Annual Means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **<u>bold and underlined</u>**.

Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g., if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.1 – Trends in Annual Mean NO_2 Concentrations in µg/m^3

Column charts (Chart A.1) illustrates trends in Annual Mean NO_2 cross all CAQM locations as set out in Table A.3 and compared to the NO_2 Annual Mean NAQO. Site identification details can be found in Table A.1.

Column charts (Chart1 to Chart 21) illustrate trends in Annual Mean NO_2 cross all NDDT locations as set out in Table A.2 and compared to the NO_2 Annual Mean NAQO. Site identification details can be found in Table A.2

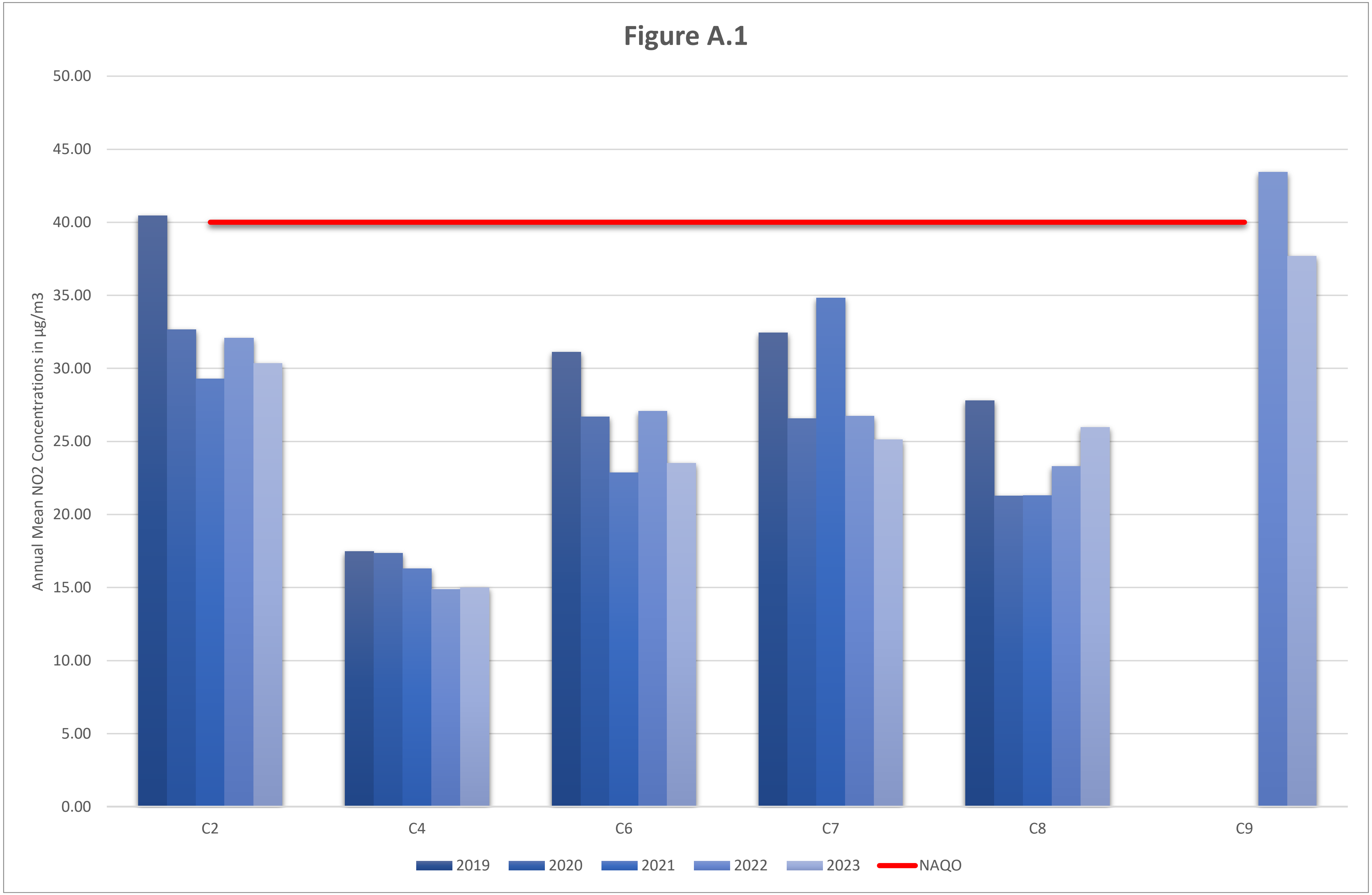
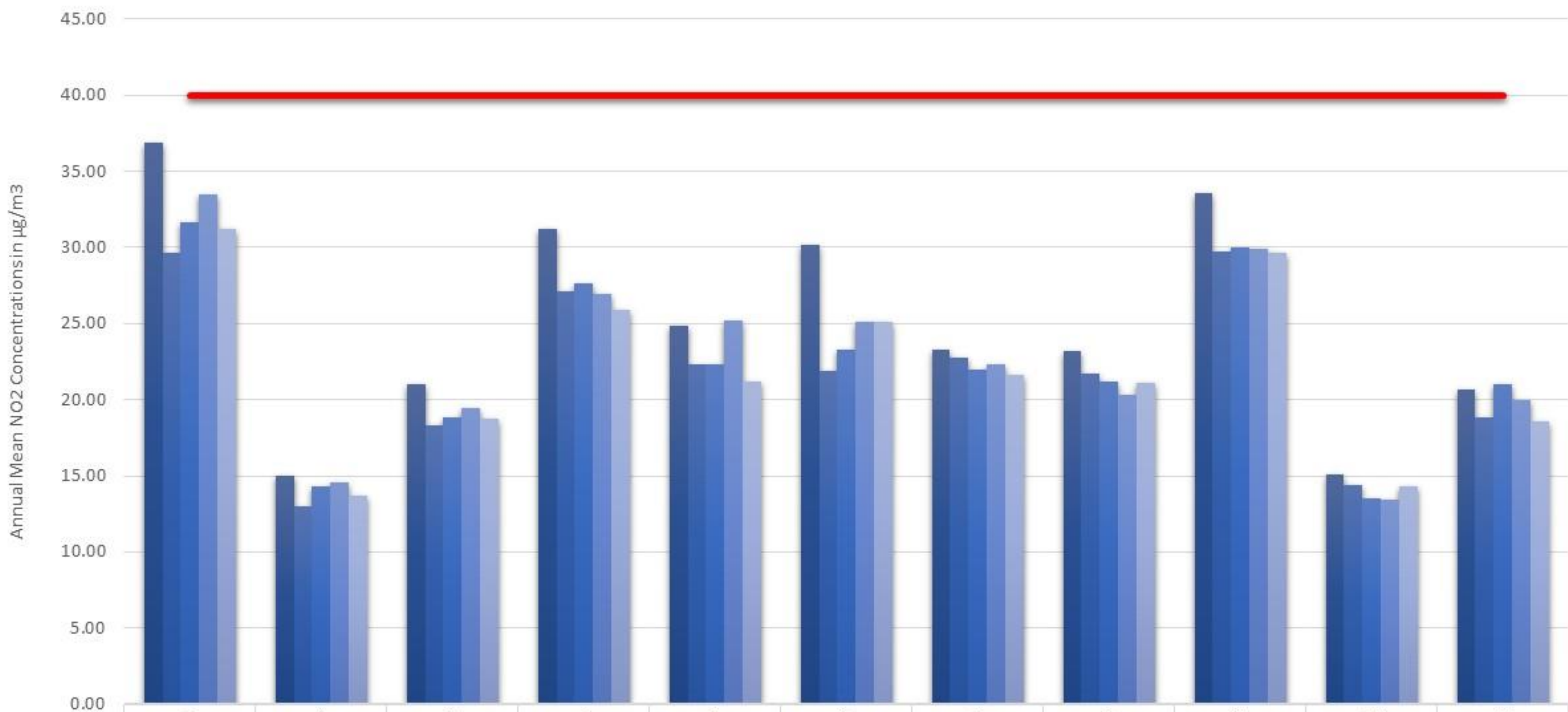


Figure A.1
Annual Mean NO2 Concentrations in µg/m3
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
C2
C4
C6
C7
C8
C9
2019
2020
2021
2022
2023
NAQO

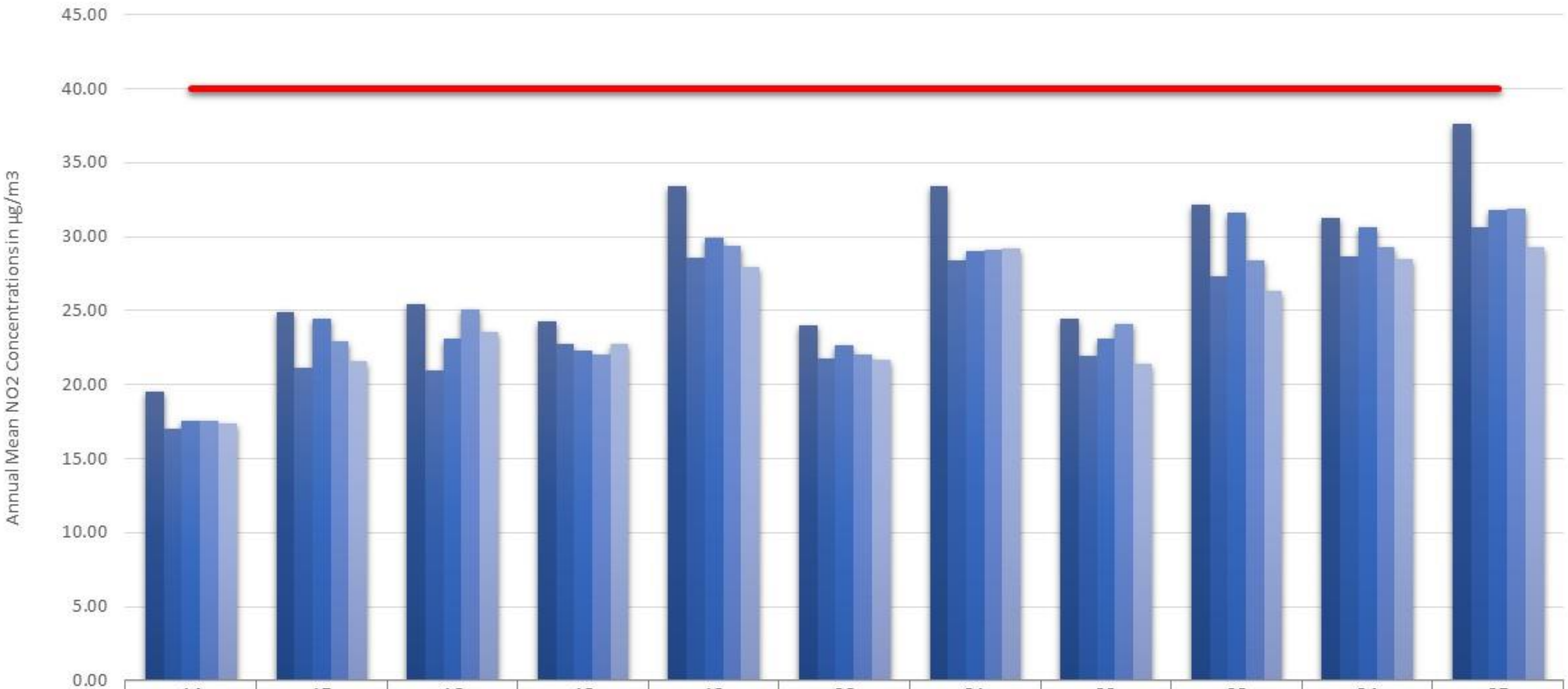
Chart 1



	1	2	3	4	5	6	7	8	9	10	11
2019	36.92	14.96	21.02	31.20	24.86	30.18	23.29	23.18	33.60	15.08	20.70
2020	29.67	12.95	18.29	27.15	22.28	21.85	22.73	21.74	29.72	14.39	18.80
2021	31.64	14.30	18.80	27.67	22.34	23.31	22.00	21.20	29.98	13.54	20.99
2022	33.46	14.56	19.46	26.94	25.22	25.15	22.35	20.36	29.90	13.46	20.00
2023	31.19	13.72	18.73	25.90	21.19	25.12	21.65	21.10	29.61	14.28	18.59
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

2019 2020 2021 2022 2023 NAQO

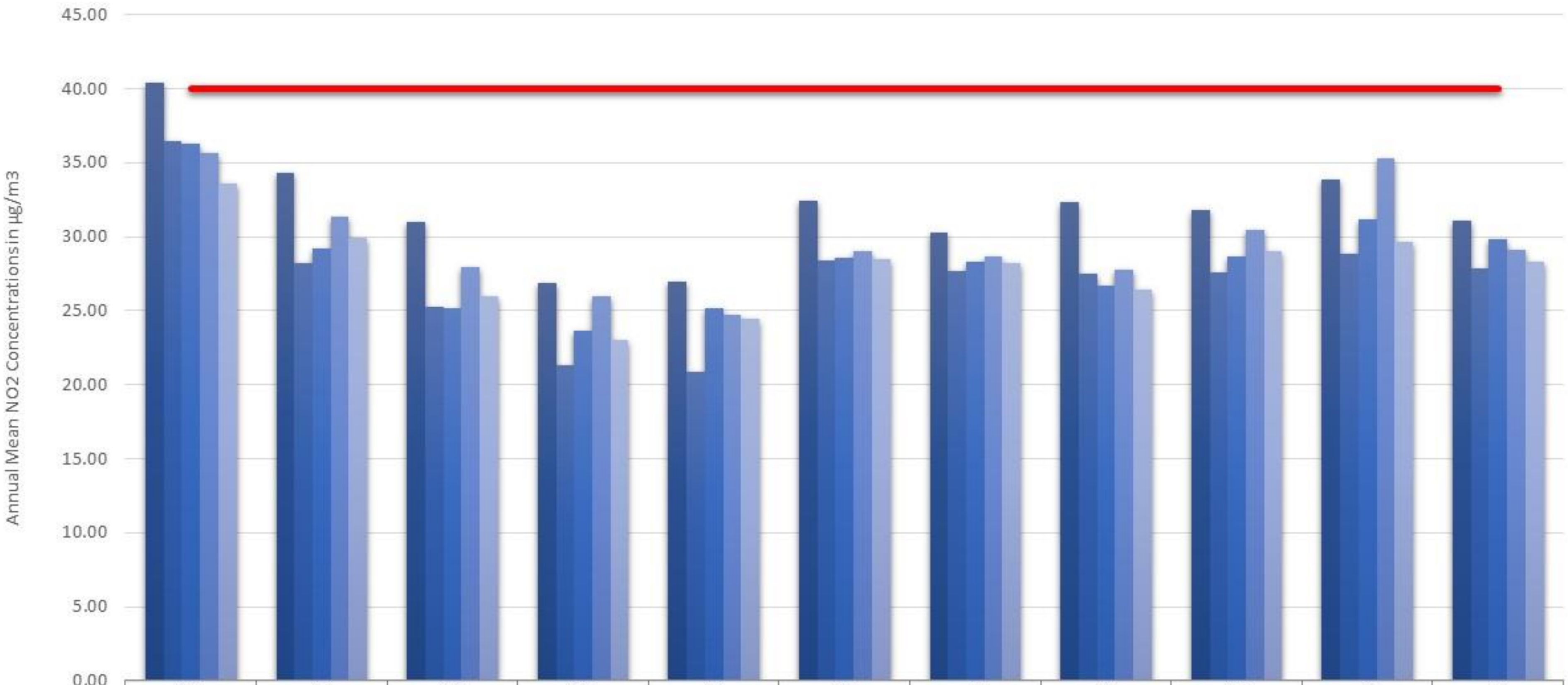
Chart 2



	14	15	16	18	19	20	21	22	23	24	25
2019	19.54	24.91	25.44	24.32	33.38	24.01	33.41	24.49	32.20	31.30	37.63
2020	17.00	21.16	20.94	22.77	28.59	21.79	28.44	21.96	27.30	28.70	30.62
2021	17.53	24.46	23.10	22.27	29.92	22.71	29.03	23.08	31.60	30.65	31.84
2022	17.57	22.97	25.10	22.02	29.40	22.01	29.09	24.10	28.40	29.28	31.94
2023	17.41	21.58	23.56	22.73	27.92	21.64	29.17	21.40	26.37	28.46	29.29
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

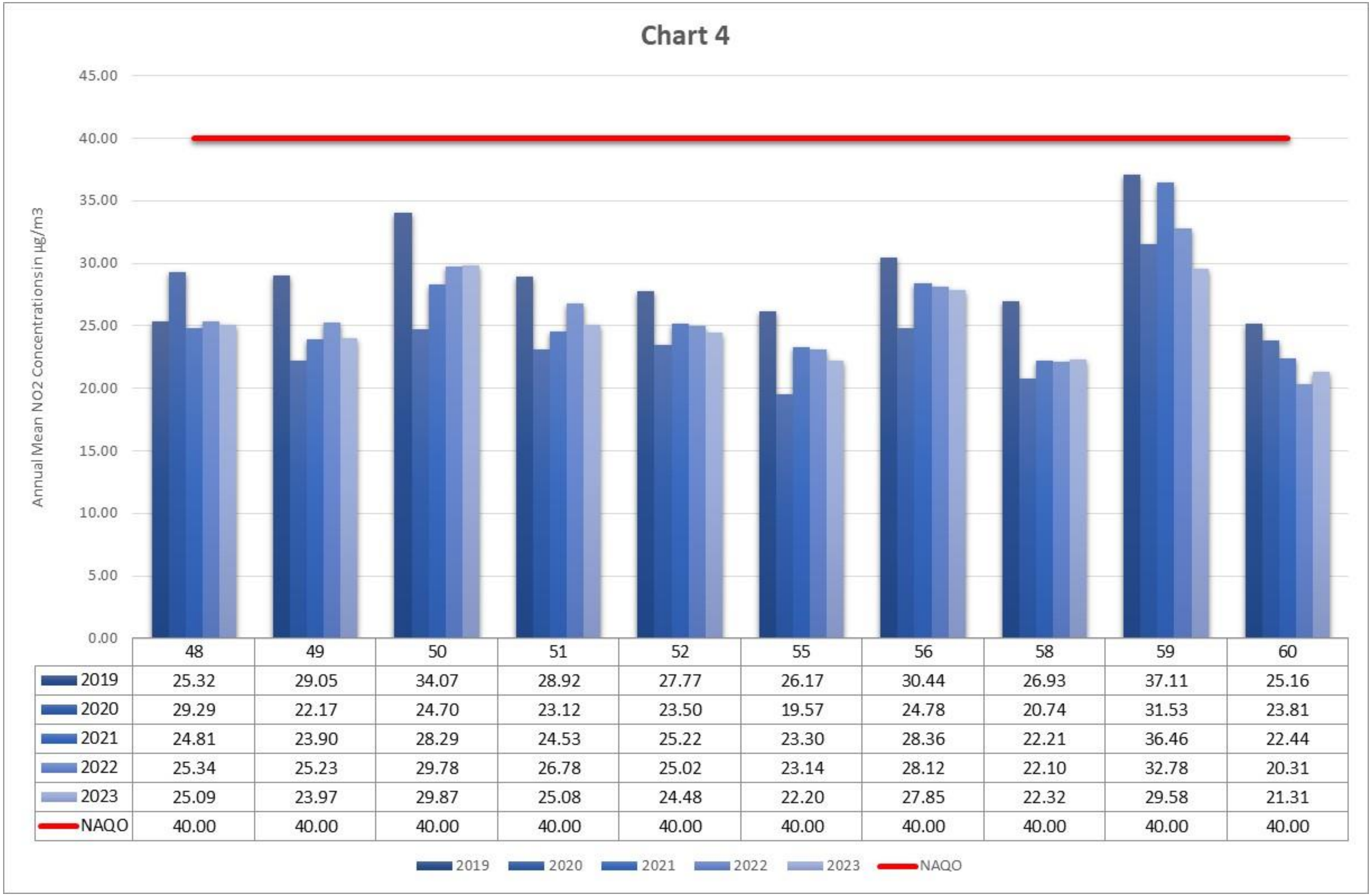
2019 2020 2021 2022 2023 NAQO

Chart 3

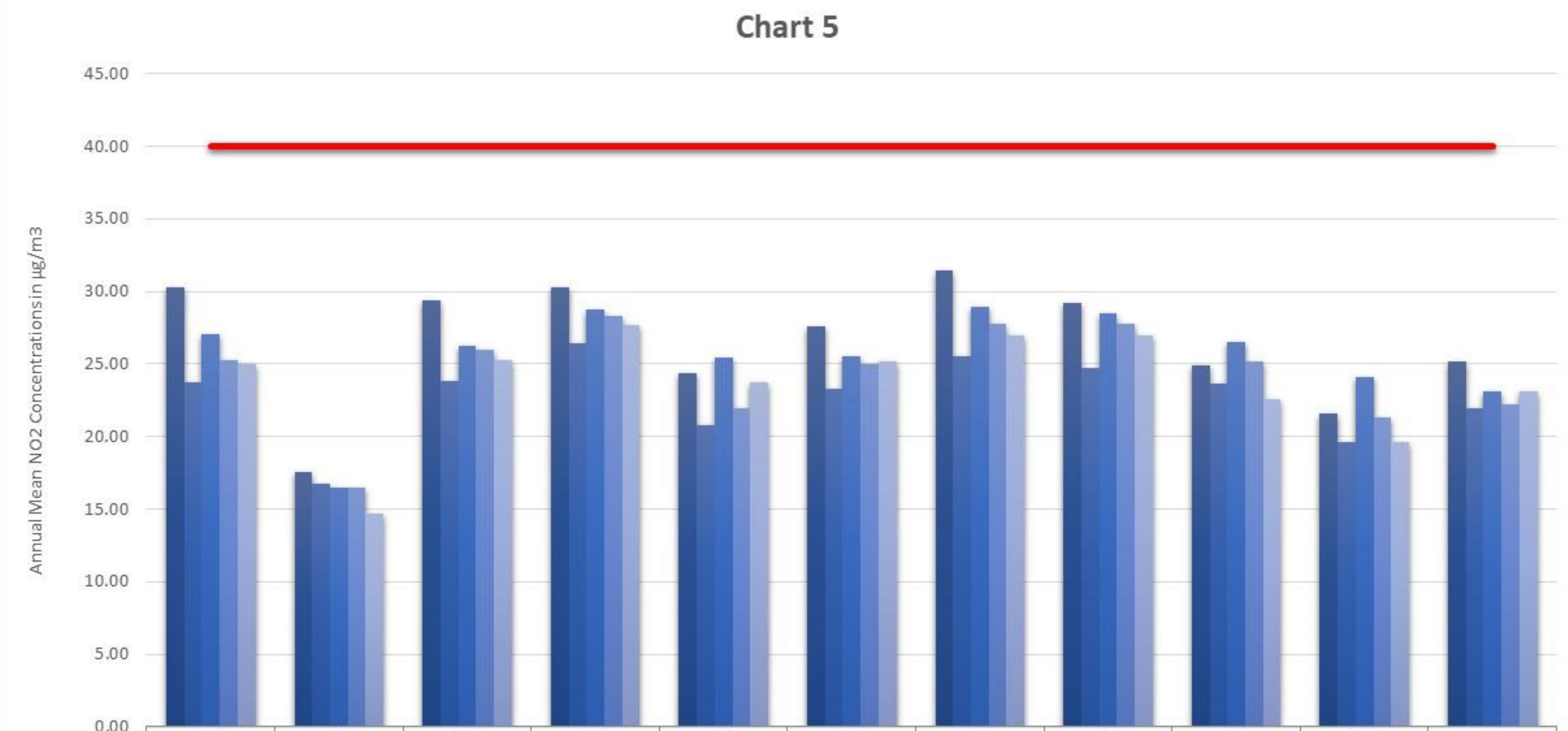


	26	30	34	35	36	42	43	44	45	46	47
2019	40.42	34.29	31.01	26.92	27.01	32.46	30.30	32.35	31.84	33.87	31.07
2020	36.51	28.20	25.26	21.36	20.88	28.41	27.70	27.49	27.61	28.86	27.87
2021	36.30	29.24	25.19	23.64	25.16	28.56	28.27	26.74	28.64	31.18	29.86
2022	35.69	31.39	27.93	25.98	24.74	29.01	28.69	27.82	30.45	35.28	29.08
2023	33.61	29.95	25.97	22.99	24.50	28.47	28.26	26.47	29.00	29.68	28.27
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

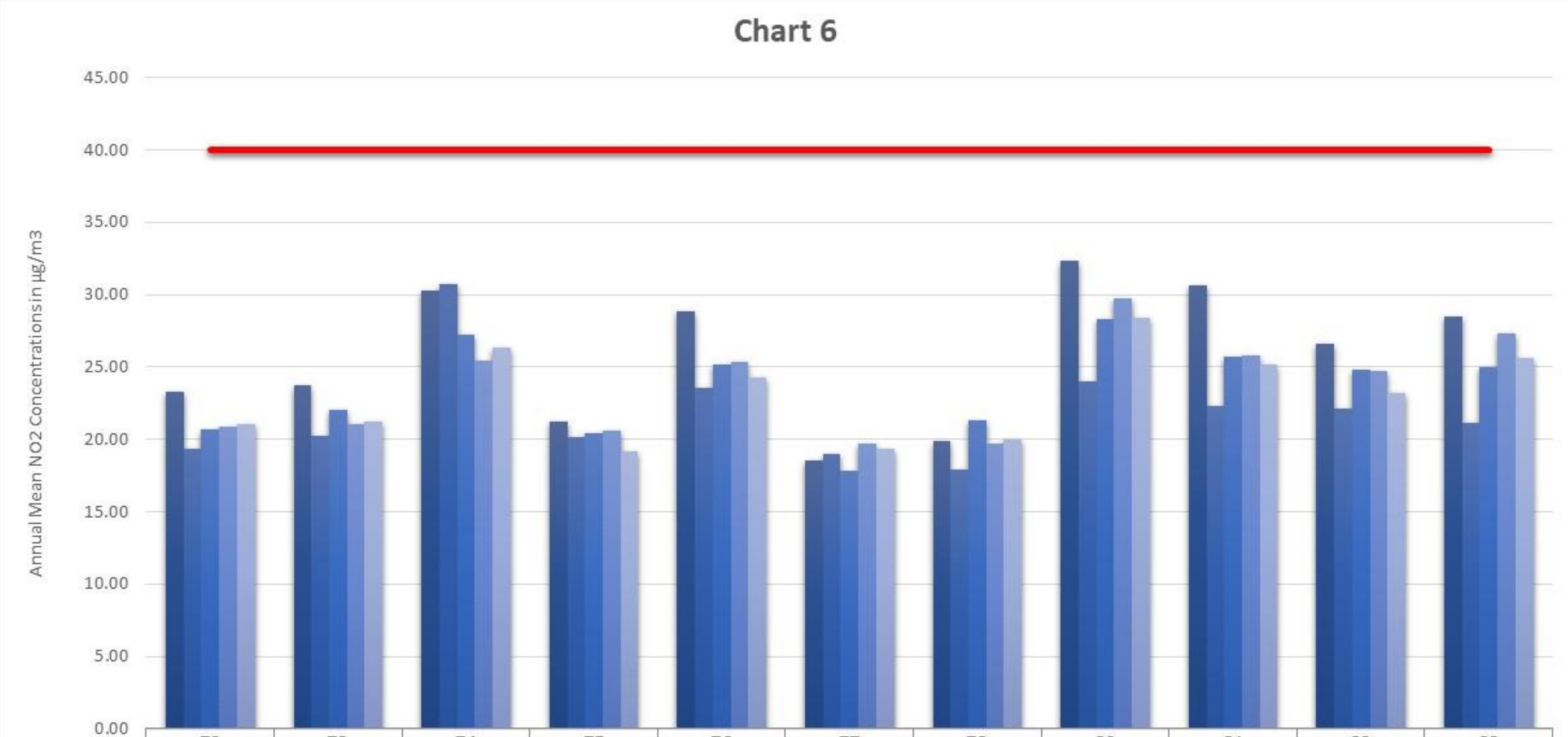
2019 2020 2021 2022 2023 NAQO



	48	49	50	51	52	55	56	58	59	60
2019	25.32	29.05	34.07	28.92	27.77	26.17	30.44	26.93	37.11	25.16
2020	29.29	22.17	24.70	23.12	23.50	19.57	24.78	20.74	31.53	23.81
2021	24.81	23.90	28.29	24.53	25.22	23.30	28.36	22.21	36.46	22.44
2022	25.34	25.23	29.78	26.78	25.02	23.14	28.12	22.10	32.78	20.31
2023	25.09	23.97	29.87	25.08	24.48	22.20	27.85	22.32	29.58	21.31
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00



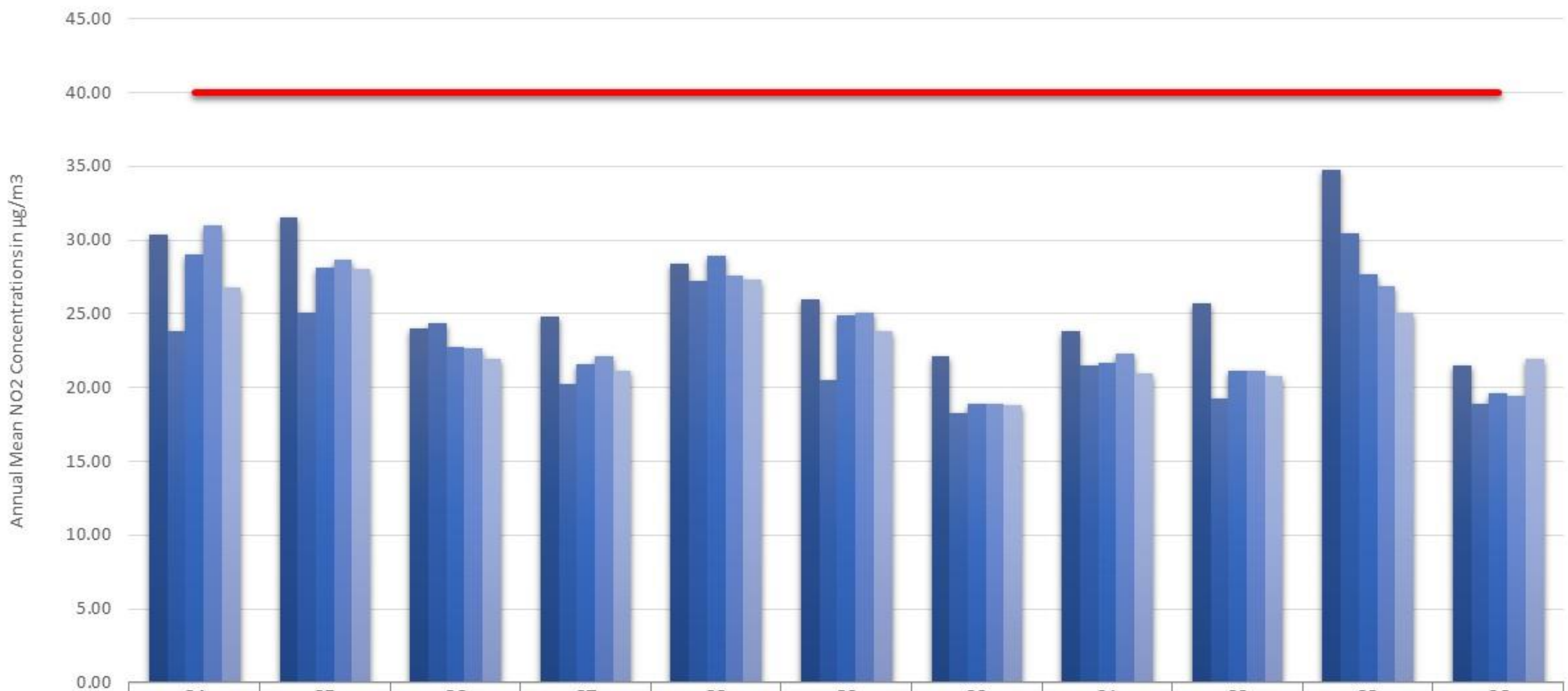
	61	62	63	64	65	66	67	68	69	70	71
2019	30.28	17.56	29.43	30.33	24.35	27.60	31.44	29.25	24.95	21.58	25.19
2020	23.76	16.78	23.83	26.43	20.79	23.33	25.54	24.71	23.68	19.59	21.97
2021	27.08	16.48	26.26	28.76	25.48	25.56	28.94	28.45	26.55	24.08	23.08
2022	25.30	16.50	25.96	28.27	21.91	24.98	27.74	27.77	25.18	21.35	22.18
2023	25.03	14.65	25.27	27.73	23.70	25.16	26.96	26.97	22.62	19.59	23.14
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00



	72	73	74	75	76	77	78	80	81	82	83
2019	23.33	23.78	30.25	21.25	28.87	18.51	19.91	32.36	30.66	26.61	28.50
2020	19.33	20.24	30.72	20.19	23.55	19.01	17.88	23.99	22.31	22.15	21.13
2021	20.73	22.04	27.28	20.43	25.14	17.79	21.30	28.29	25.73	24.84	25.04
2022	20.85	21.09	25.45	20.60	25.36	19.72	19.72	29.79	25.79	24.71	27.31
2023	21.09	21.19	26.30	19.13	24.31	19.36	20.01	28.37	25.19	23.24	25.62
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

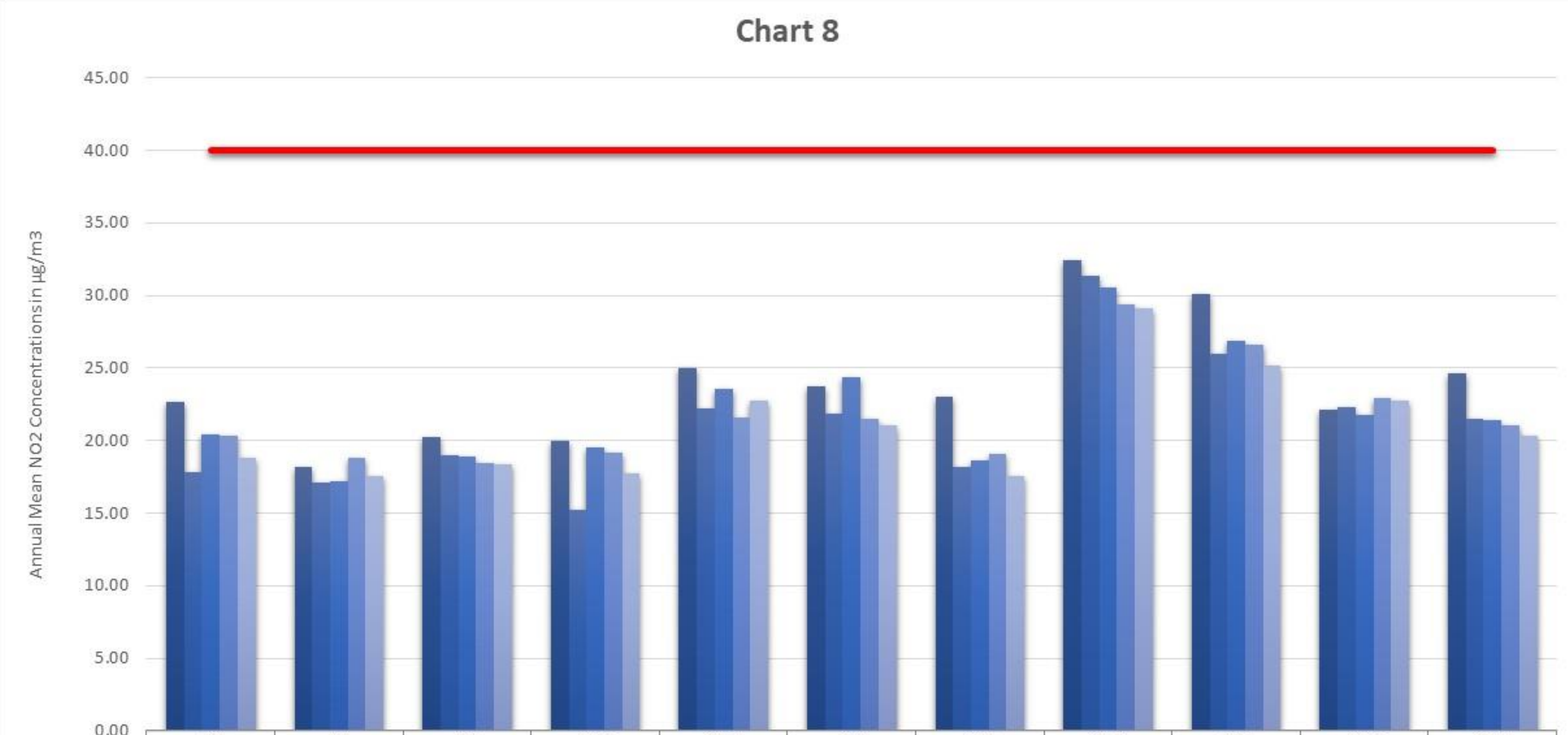
2019 2020 2021 2022 2023 NAQO

Chart 7



	84	85	86	87	88	89	90	91	92	93	96
2019	30.40	31.52	24.00	24.80	28.43	25.97	22.13	23.84	25.70	34.81	21.48
2020	23.81	25.06	24.33	20.23	27.25	20.54	18.23	21.54	19.26	30.46	18.90
2021	29.03	28.11	22.80	21.60	28.95	24.91	18.92	21.68	21.11	27.68	19.62
2022	31.02	28.68	22.70	22.16	27.58	25.13	18.86	22.31	21.16	26.90	19.47
2023	26.83	28.04	21.94	21.18	27.35	23.83	18.80	20.92	20.75	25.07	21.91
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

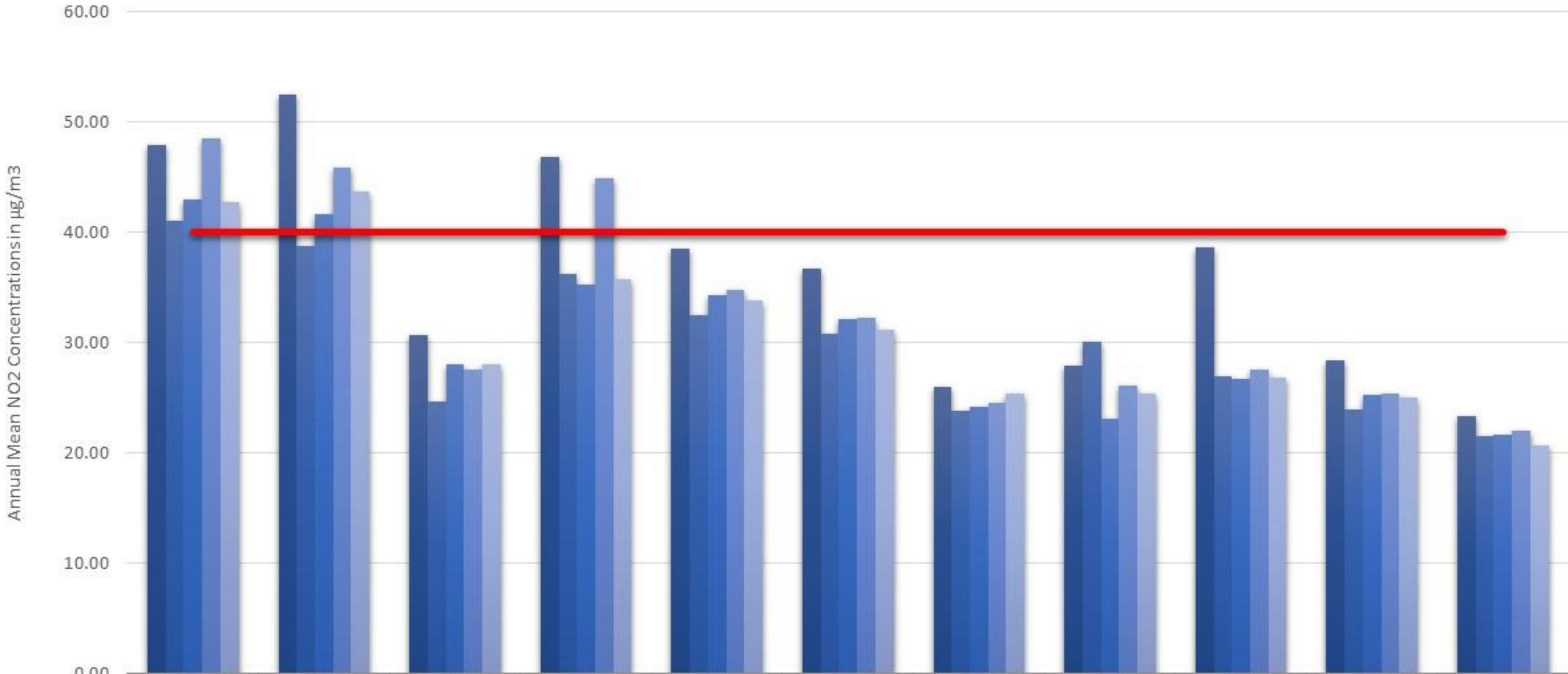
2019 2020 2021 2022 2023 NAQO



	97	98	99	100	101	102	103	108	109	110	111
2019	22.64	18.19	20.29	19.94	25.00	23.71	23.04	32.46	30.11	22.15	24.60
2020	17.86	17.10	18.98	15.19	22.21	21.86	18.16	31.38	26.00	22.35	21.53
2021	20.39	17.19	18.94	19.57	23.58	24.34	18.59	30.59	26.84	21.73	21.45
2022	20.34	18.81	18.46	19.14	21.55	21.52	19.07	29.37	26.57	22.95	21.04
2023	18.78	17.56	18.35	17.71	22.77	21.05	17.58	29.15	25.18	22.78	20.38
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

2019 2020 2021 2022 2023 NAQO

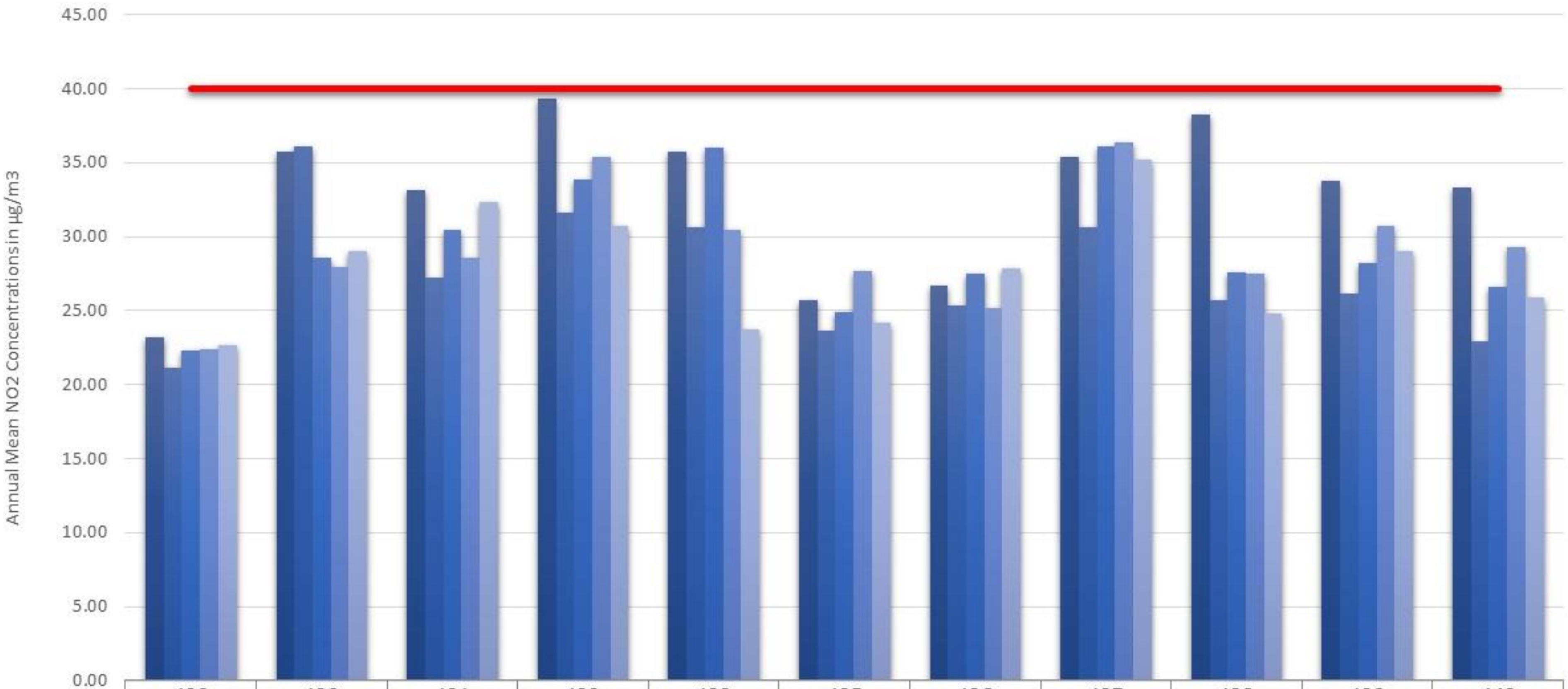
Chart 9



	117	118	119	120	121	122	124	125	126	127	128
2019	48.00	52.52	30.67	46.90	38.55	36.76	26.07	27.88	38.66	28.44	23.39
2020	41.04	38.76	24.69	36.30	32.49	30.77	23.83	30.05	27.03	23.96	21.54
2021	42.97	41.66	28.06	35.31	34.34	32.20	24.18	23.16	26.74	25.23	21.72
2022	48.54	45.90	27.52	44.88	34.76	32.23	24.52	26.10	27.62	25.37	22.02
2023	42.79	43.72	28.02	35.73	33.87	31.20	25.44	25.44	26.81	25.03	20.76
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

2019 2020 2021 2022 2023 NAQO

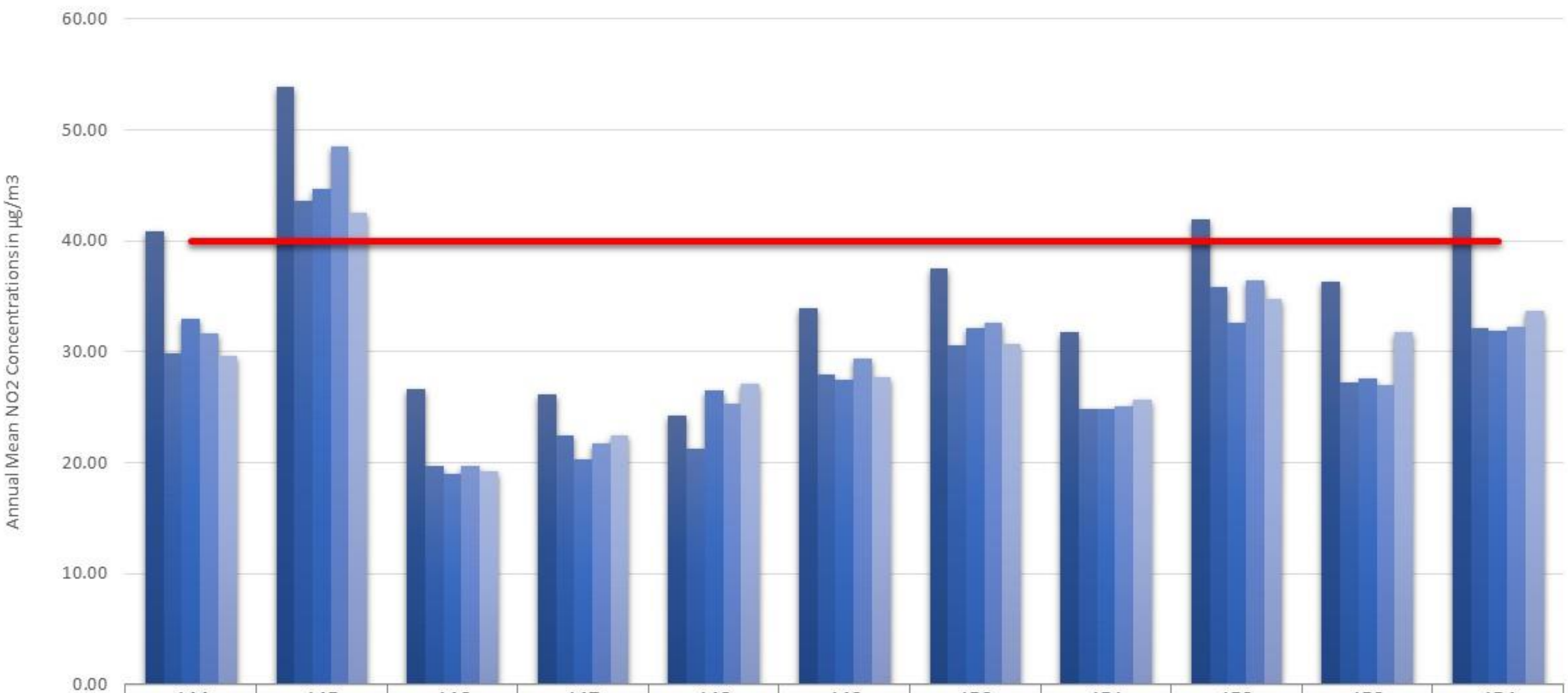
Chart 10



	129	130	131	132	133	135	136	137	138	139	143
2019	23.18	35.80	33.16	39.36	35.73	25.73	26.67	35.42	38.31	33.74	33.35
2020	21.11	36.15	27.28	31.62	30.65	23.62	25.35	30.67	25.68	26.20	22.92
2021	22.30	28.60	30.45	33.83	36.00	24.92	27.48	36.11	27.63	28.19	26.59
2022	22.39	27.97	28.54	35.42	30.44	27.69	25.20	36.39	27.54	30.71	29.33
2023	22.65	29.02	32.37	30.75	23.72	24.15	27.90	35.21	24.83	29.05	25.91
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

2019 2020 2021 2022 2023 NAQO

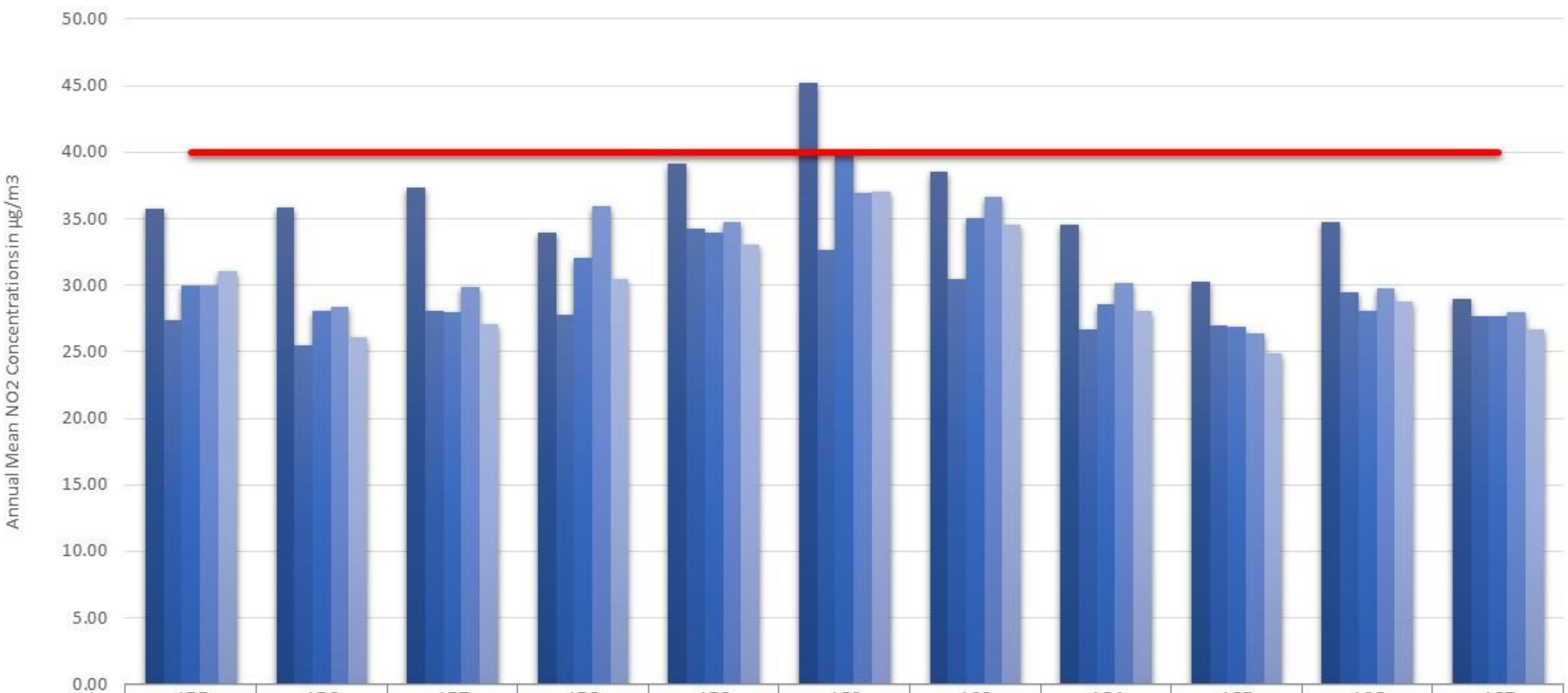
Chart 11



	144	145	146	147	148	149	150	151	152	153	154
2019	40.81	53.91	26.69	26.17	24.19	33.93	37.46	31.83	41.97	36.31	43.04
2020	29.88	43.59	19.73	22.51	21.25	27.93	30.57	24.81	35.79	27.23	32.10
2021	32.96	44.63	19.01	20.27	26.51	27.53	32.08	24.81	32.64	27.64	31.94
2022	31.61	48.47	19.69	21.70	25.35	29.33	32.67	25.07	36.41	27.05	32.24
2023	29.65	42.51	19.21	22.45	27.09	27.72	30.68	25.71	34.81	31.77	33.74
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

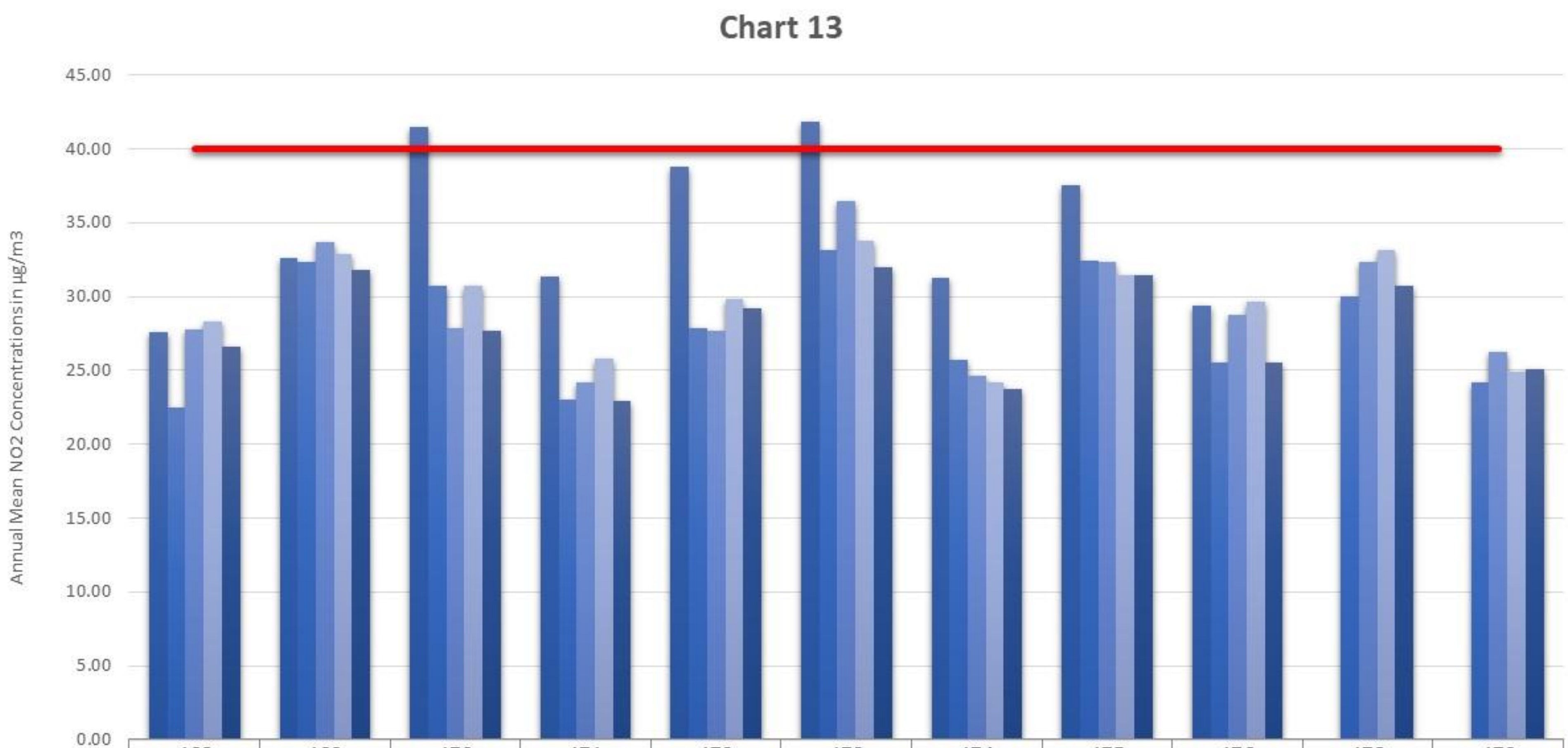
2019 2020 2021 2022 2023 NAQO

Chart 12



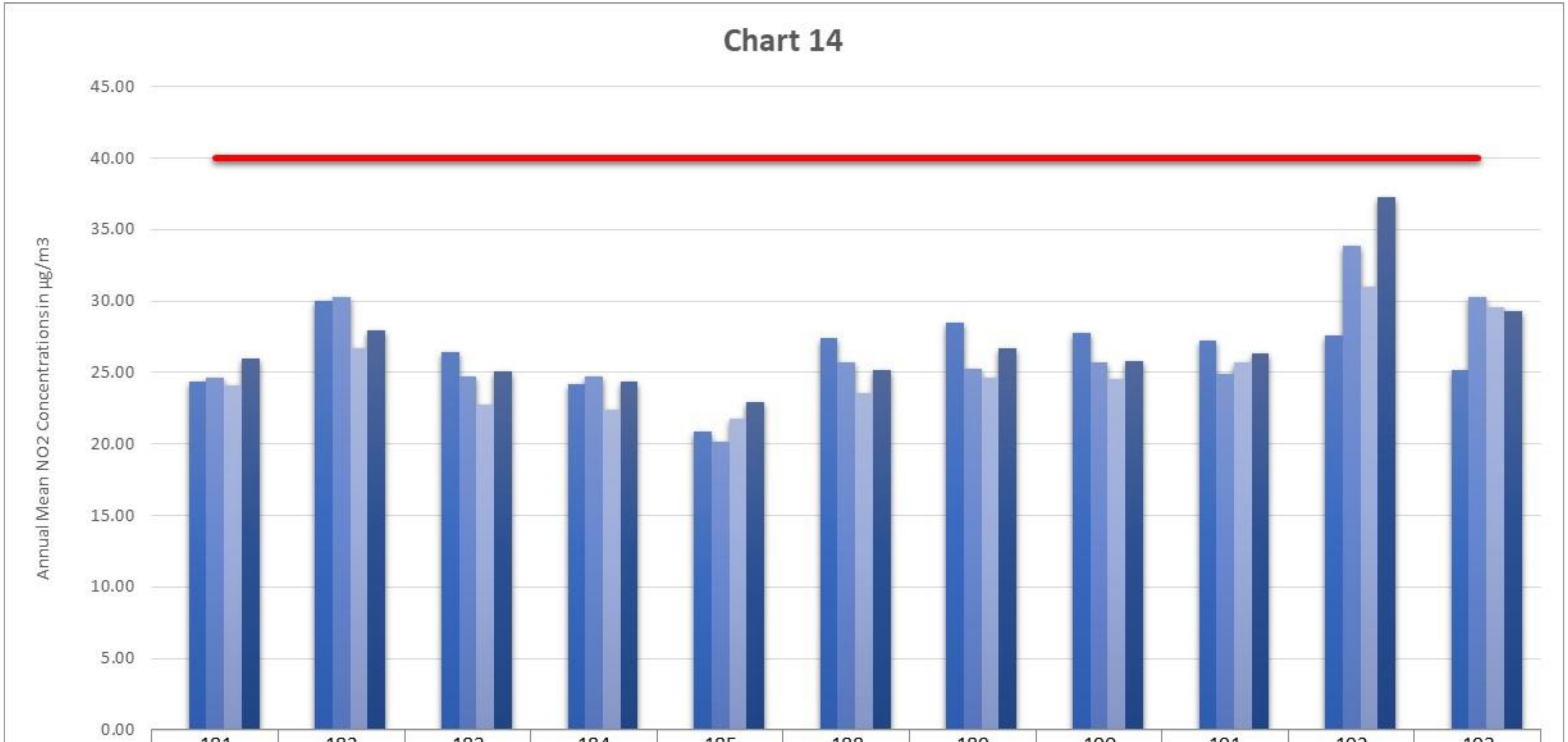
	155	156	157	158	159	162	163	164	165	166	167
2019	35.76	35.80	37.33	33.96	39.16	45.25	38.56	34.57	30.25	34.71	29.01
2020	27.42	25.50	28.03	27.80	34.23	32.68	30.45	26.70	26.97	29.47	27.63
2021	29.99	28.11	27.99	32.09	33.93	39.70	35.07	28.54	26.87	28.11	27.66
2022	30.00	28.38	29.87	35.95	34.70	36.98	36.67	30.18	26.41	29.76	27.99
2023	31.08	26.04	27.06	30.51	33.04	37.04	34.50	28.12	24.93	28.73	26.65
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

2019 2020 2021 2022 2023 NAQO

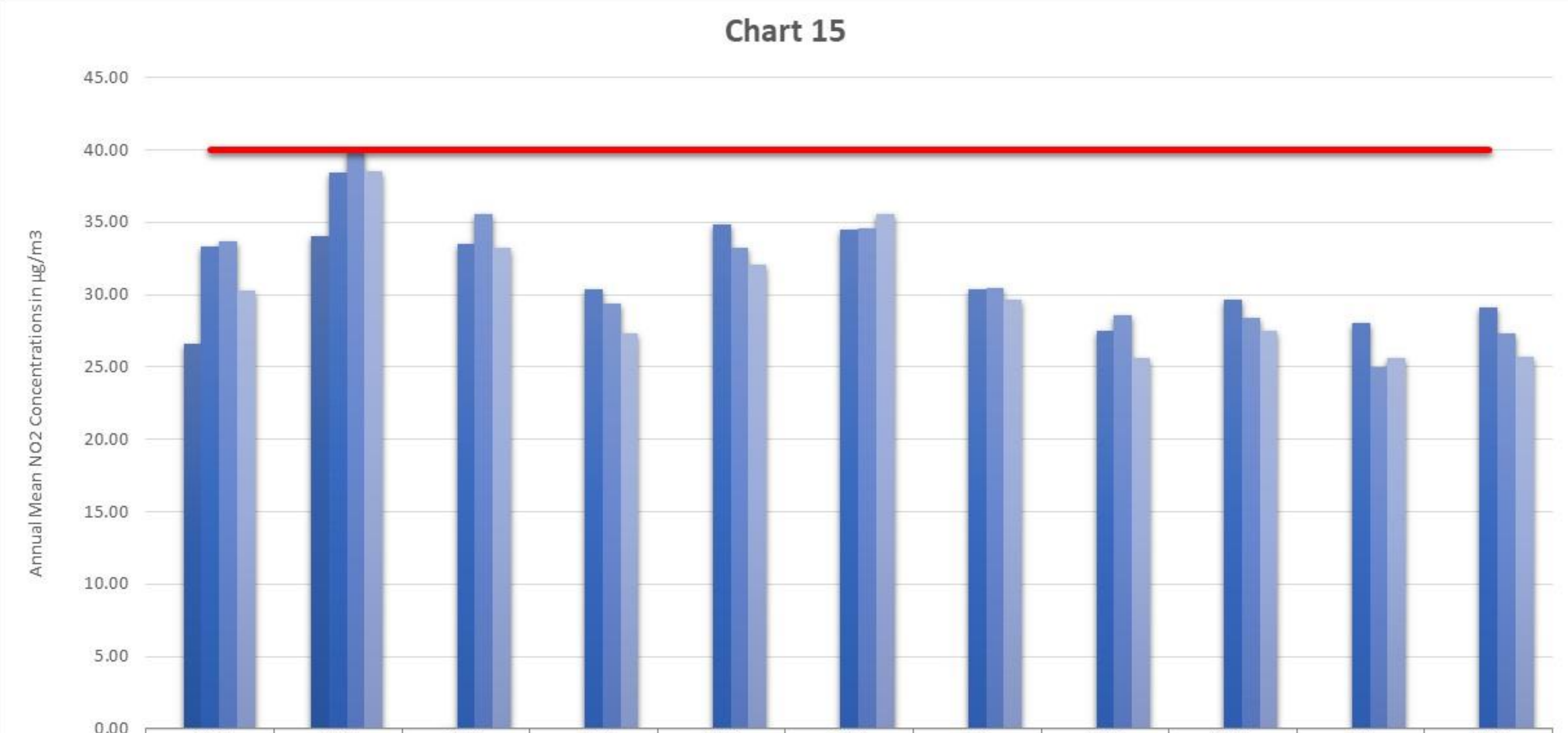


	168	169	170	171	172	173	174	175	176	178	179
2019	27.62	32.66	41.50	31.33	38.77	41.88	31.30	37.55	29.41		
2020	22.53	32.35	30.72	23.07	27.90	33.17	25.71	32.42	25.50	29.98	24.21
2021	27.82	33.72	27.91	24.18	27.69	36.49	24.64	32.32	28.72	32.33	26.23
2022	28.32	32.93	30.74	25.77	29.88	33.80	24.22	31.49	29.66	33.16	24.91
2023	26.58	31.83	27.70	22.94	29.17	31.97	23.71	31.41	25.51	30.75	25.12
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

2019 2020 2021 2022 2023 NAQO



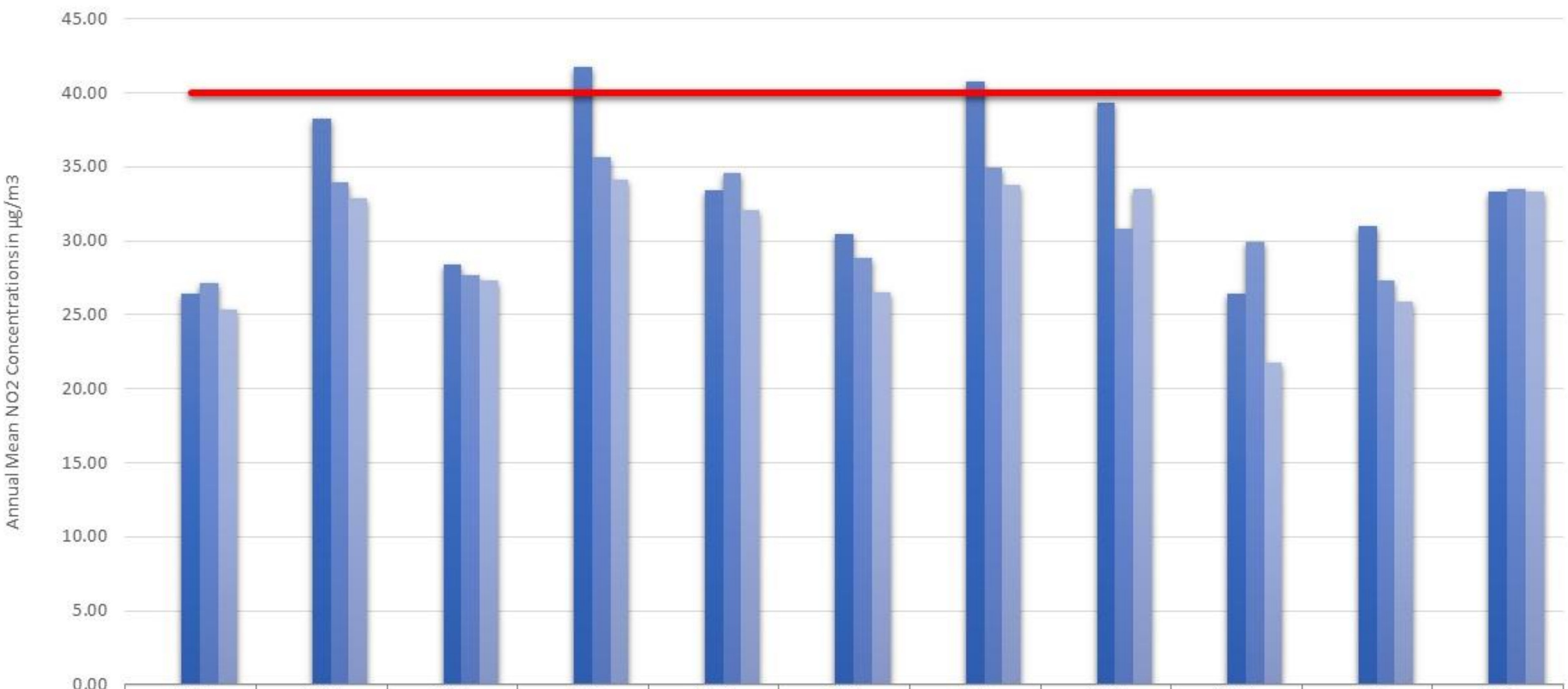
	181	182	183	184	185	188	189	190	191	192	193
2019											
2020	24.33	30.04	26.44	24.23	20.92	27.40	28.49	27.73	27.23	27.61	25.18
2021	24.60	30.28	24.72	24.71	20.15	25.75	25.27	25.69	24.87	33.90	30.30
2023	24.08	26.71	22.72	22.39	21.74	23.58	24.65	24.54	25.70	31.01	29.53
2022	26.02	27.94	25.12	24.38	22.91	25.17	26.67	25.81	26.33	37.30	29.26
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00



	194	213	214	217	218	220	221	222	223	224	225
2019											
2020	26.66	34.09	0.00								
2021	33.36	38.41	33.53	30.41	34.82	34.52	30.39	27.47	29.64	28.04	29.13
2022	33.67	40.00	35.56	29.40	33.21	34.63	30.45	28.59	28.42	24.98	27.31
2023	30.26	38.53	33.22	27.30	32.08	35.54	29.69	25.67	27.50	25.60	25.72
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

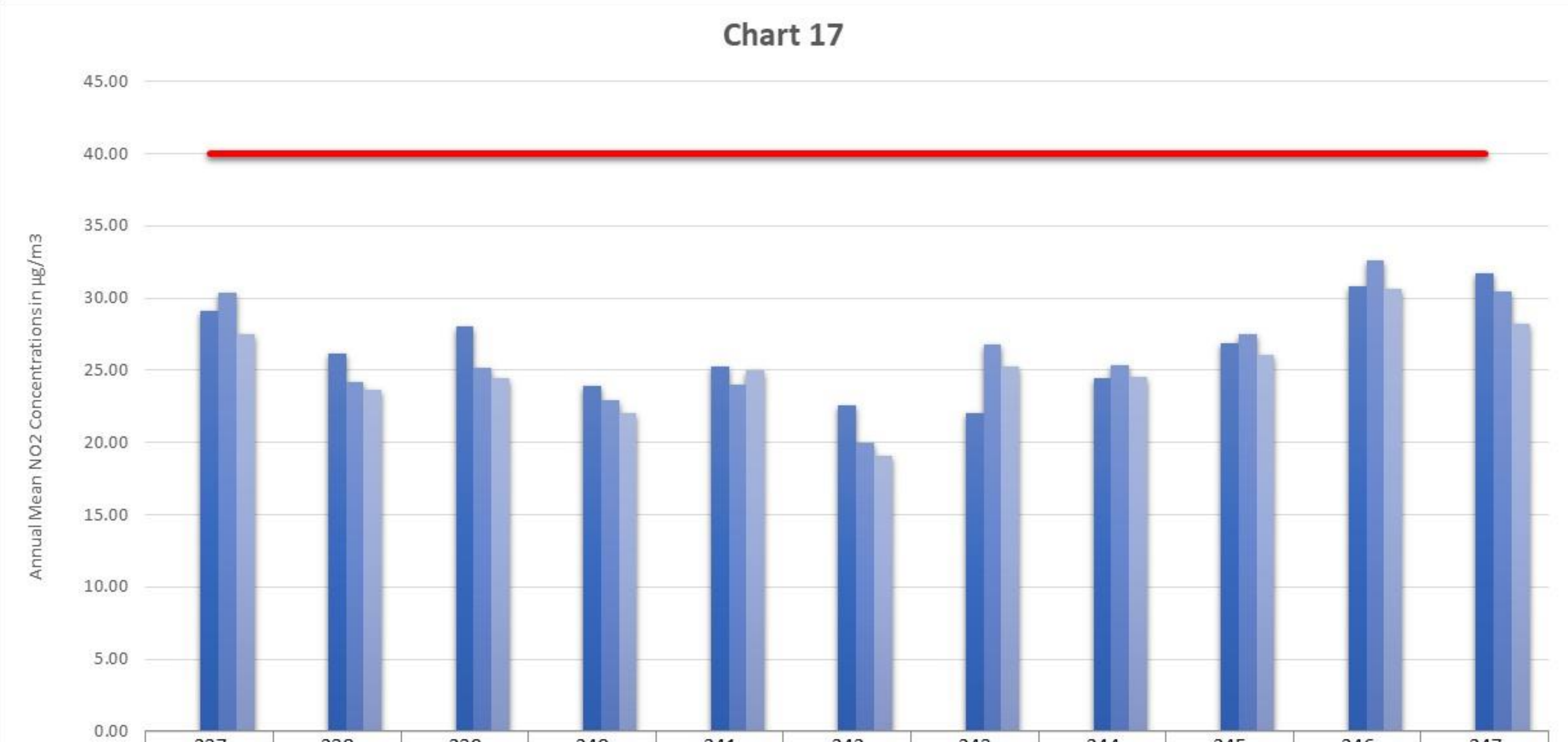
2019 2020 2021 2022 2023 NAQO

Chart 16



	226	227	228	229	230	231	232	233	234	235	236
2019											
2020											
2021	26.44	38.29	28.36	41.80	33.41	30.50	40.77	39.30	26.42	30.97	33.37
2022	27.12	33.94	27.72	35.69	34.57	28.84	34.95	30.80	29.89	27.31	33.50
2023	25.32	32.88	27.36	34.18	32.10	26.53	33.81	33.48	21.73	25.92	33.32
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

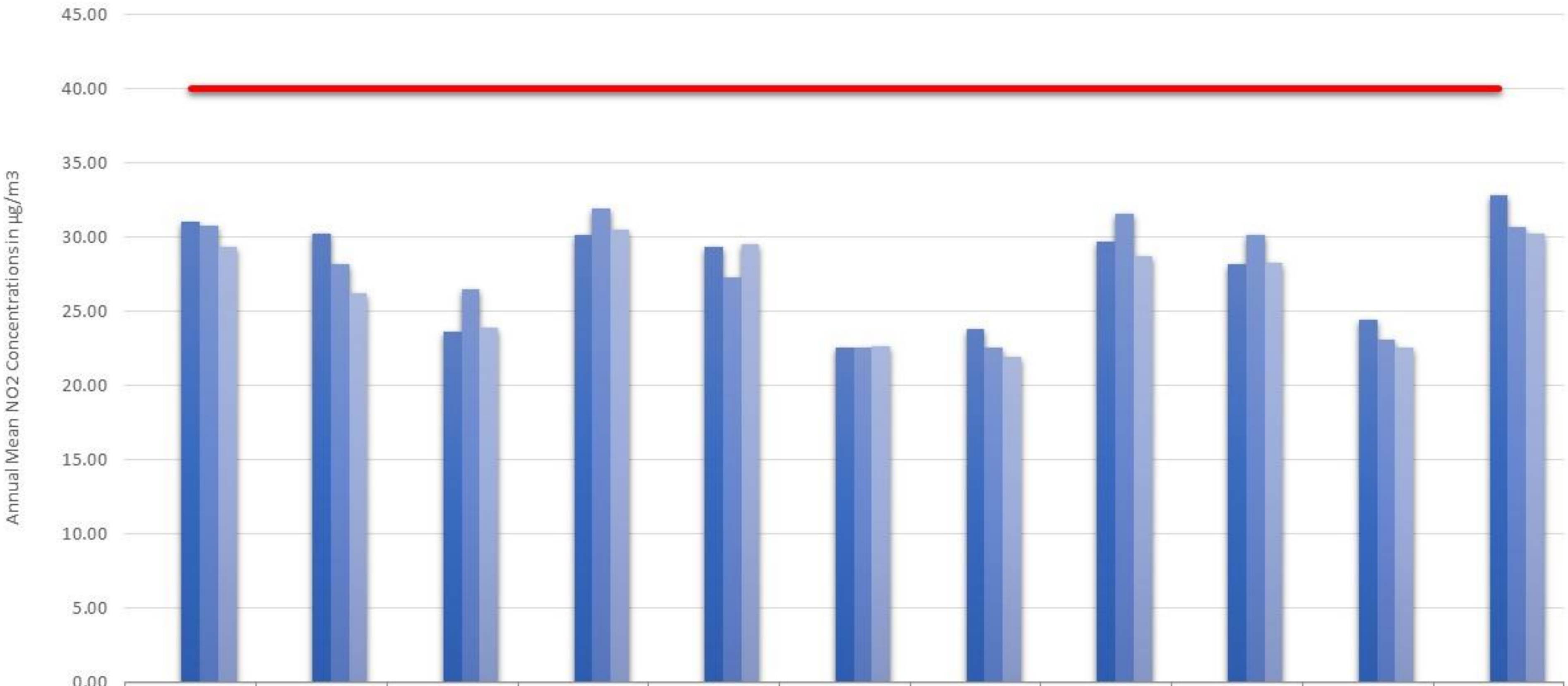
2019 2020 2021 2022 2023 NAQO



	237	238	239	240	241	242	243	244	245	246	247
2019											
2020											
2021	29.08	26.17	28.08	23.92	25.27	22.58	22.08	24.48	26.88	30.80	31.76
2022	30.36	24.23	25.19	22.93	24.04	19.94	26.80	25.37	27.48	32.62	30.48
2023	27.52	23.62	24.47	22.08	24.98	19.12	25.30	24.57	26.08	30.69	28.20
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

2019 2020 2021 2022 2023 NAQO

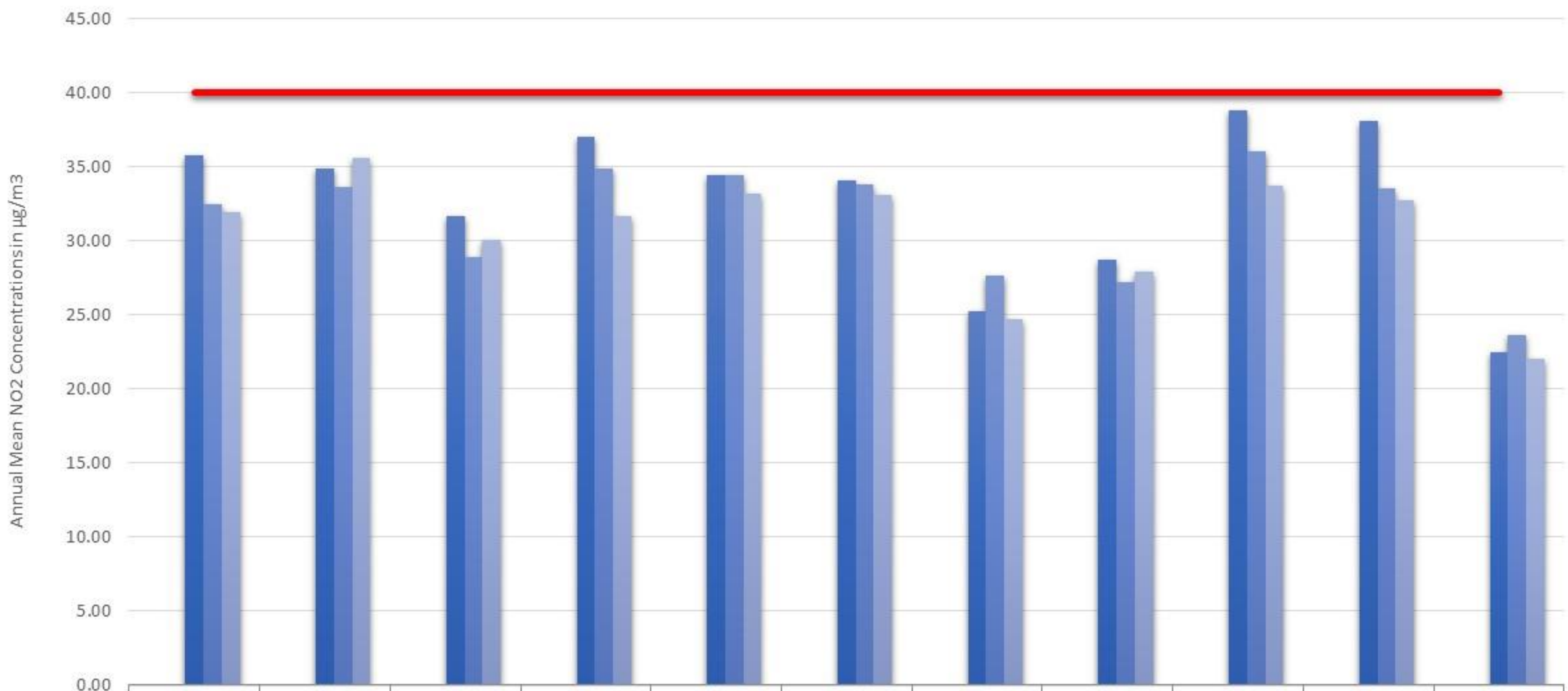
Chart 18



	248	249	250	251	252	253	254	255	256	257	258
2019											
2020											
2021	31.02	30.22	23.65	30.18	29.33	22.55	23.85	29.75	28.20	24.47	32.84
2022	30.76	28.22	26.46	31.94	27.26	22.58	22.55	31.58	30.14	23.14	30.65
2023	29.38	26.24	23.86	30.49	29.55	22.68	21.91	28.70	28.30	22.52	30.23
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

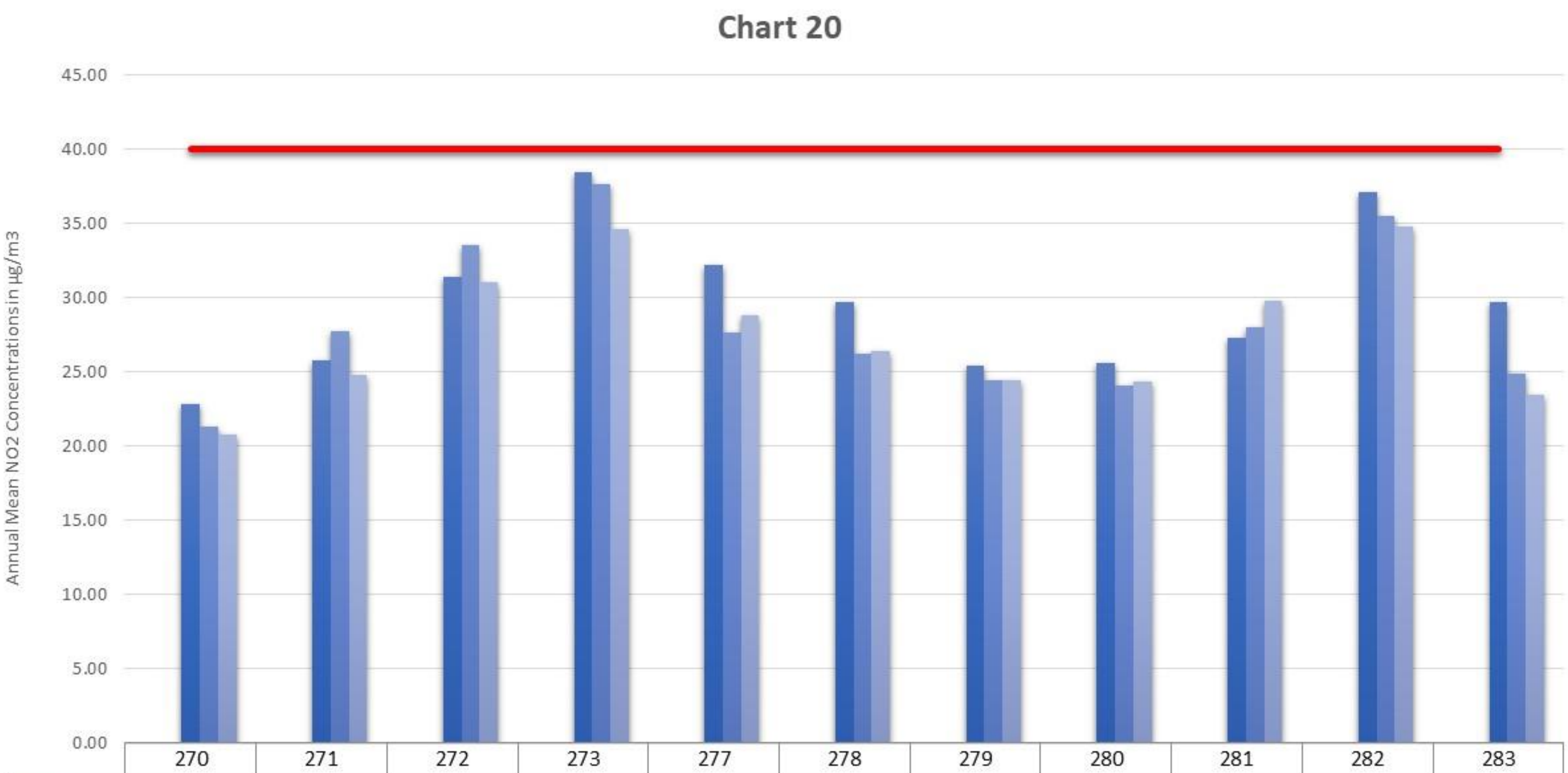
2019 2020 2021 2022 2023 NAQO

Chart 19



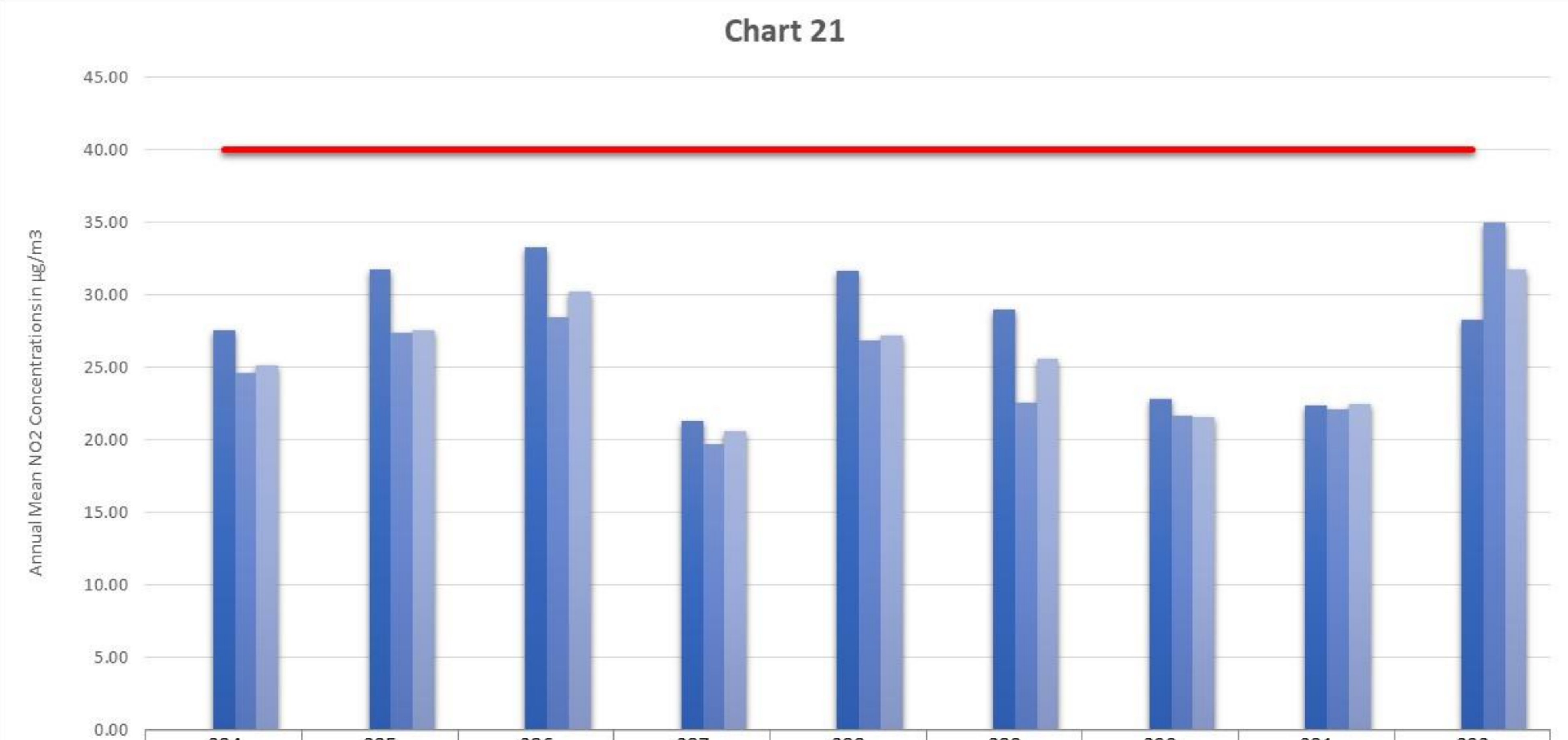
	259	260	261	262	263	264	265	266	267	268	269
2019											
2020											
2021	35.75	34.85	31.65	37.00	34.49	34.06	25.23	28.72	38.86	38.11	22.44
2022	32.49	33.62	28.94	34.89	34.44	33.86	27.62	27.21	36.05	33.59	23.65
2023	31.98	35.60	30.06	31.68	33.16	33.09	24.68	27.93	33.70	32.75	22.03
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

2019 2020 2021 2022 2023 NAQO



	270	271	272	273	277	278	279	280	281	282	283
2019											
2020											
2021	22.79	25.75	31.43	38.50	32.17	29.73	25.42	25.63	27.31	37.09	29.67
2022	21.35	27.77	33.51	37.70	27.66	26.22	24.42	24.06	28.05	35.56	24.91
2023	20.82	24.78	31.06	34.62	28.78	26.43	24.41	24.32	29.79	34.82	23.42
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

2019 2020 2021 2022 2023 NAQO



	284	285	286	287	288	289	290	291	292
2019									
2020									
2021	27.56	31.79	33.25	21.35	31.71	29.04	22.83	22.37	28.31
2023	24.60	27.43	28.46	19.72	26.85	22.55	21.67	22.12	34.94
2022	25.13	27.56	30.25	20.62	27.20	25.63	21.61	22.51	31.76
NAQO	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

Table A.5 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m³.

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2019	2020	2021	2022	2023
C2	464925	102129	Kerbside	96	96	0	0	0	0	0
C4	465403	103952	Urban Background	99	99	0		0	0	3
C6	466004	102348	Roadside	85	85	0	0	0	0	0
C7	464397	101270	Roadside	97	97	0	1	0	0	0
C8	463835	100259	Roadside	99	99	0	0	0	0	0
C9	463933	100509	Roadside	97	97				0	0

Notes:

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m³ have been recorded.

Exceedances of the NO_2 1-hour mean objective (200µg/m³ not to be exceeded more than 18 times/year) are shown in **bold**.

If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g., if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.2 – Trends in Number of NO_2 1-Hour Means > 200µg/m^3

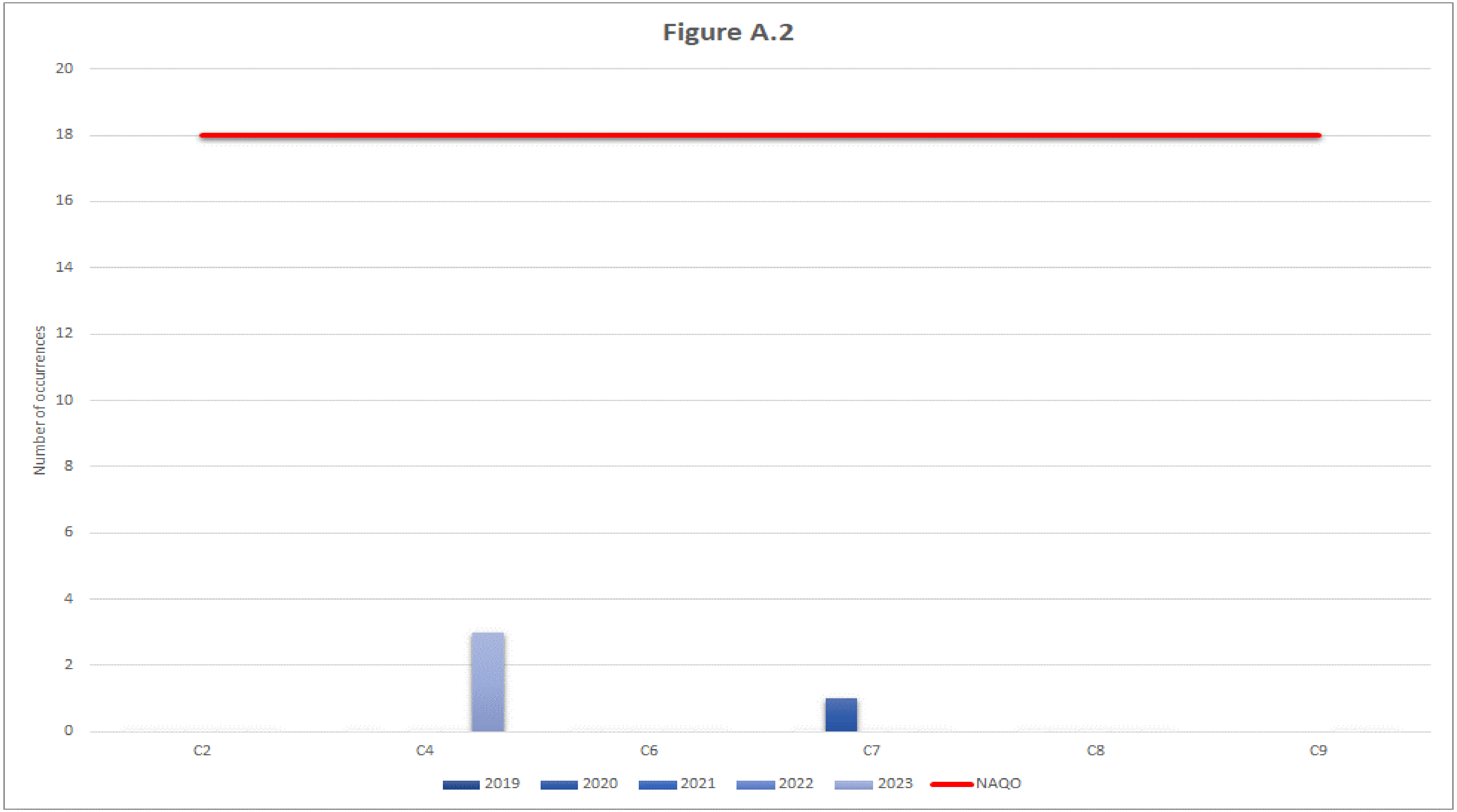


Table A.6 – Annual Mean PM_{10} Monitoring Results ($\mu g/m^3$)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2019	2020	2021	2022	2023
C2	464925	102129	Kerbside	74	74	17.79	14.86	16.23	17.39	16.30
C4	465403	103952	Urban Background	100	100	15.08	16.62	14.22	15.7	14.55
C6	466004	102348	Roadside	100	100			14.52	16.12	16.40
C7	464397	101270	Roadside	98	98	14.74	14.9	14.49	14.04	15.11
C8	463835	100259	Roadside	98	98	19.49	18.25	17.99	19.27	18.72
C9	463933	100509	Roadside	100	100				17.68	17.03

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16**

Notes:

The Annual Mean concentrations are presented as $\mu g/m^3$.

Exceedances of the PM_{10} Annual Mean objective of $40\mu g/m^3$ are shown in **bold**.

All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g., if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.3 – Trends in Annual Mean PM_{10} Concentrations

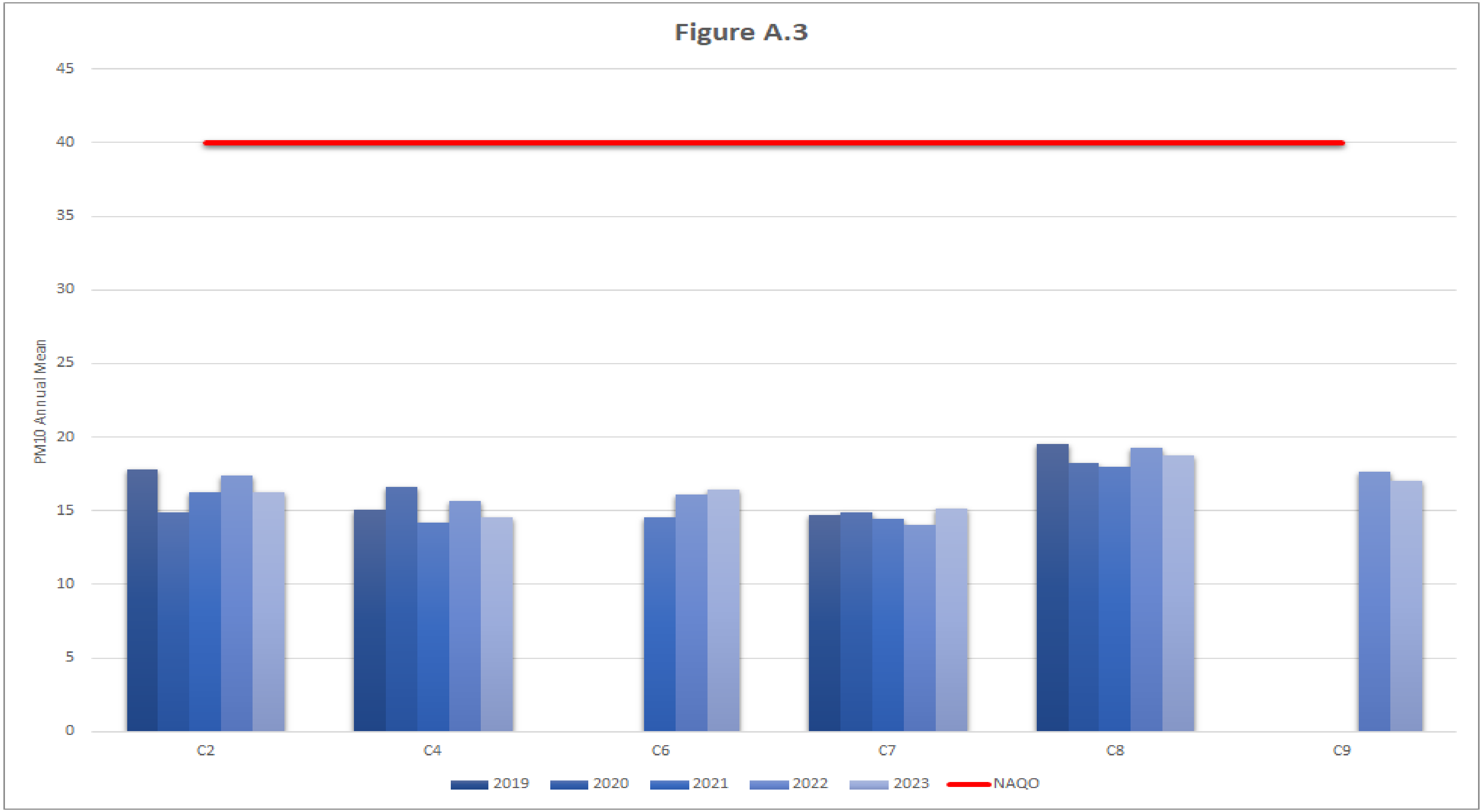


Table A.7 – 24-hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-hour Means > 50µg/m^3.

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2019	2020	2021	2022	2023
C2	464925	102129	Kerbside	74	74	0	1	3	0	1
C4	465403	103952	Urban Background	99.96	99.96	1	0	0	0	0
C6	466004	102348	Roadside	100	100			1	0	0
C7	464397	101270	Roadside	98	98	0	1	2	0	0
C8	463835	100259	Roadside	97.79	97.79	2	2	1	0	0
C9	463933	100509	Roadside	99.95	99.95				4	0

Notes:

Results are presented as the number of 24-hour periods where 24-hour mean concentrations greater than 50µg/m^3 have been recorded.

Exceedances of the PM_{10} 24-hour mean objective (50µg/m^3 not to be exceeded more than 35 times/year) are shown in **bold**.

If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g., if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.4 – Trends in Number of 24-Hour Mean PM_{10} Results >50µg/m^{3}.

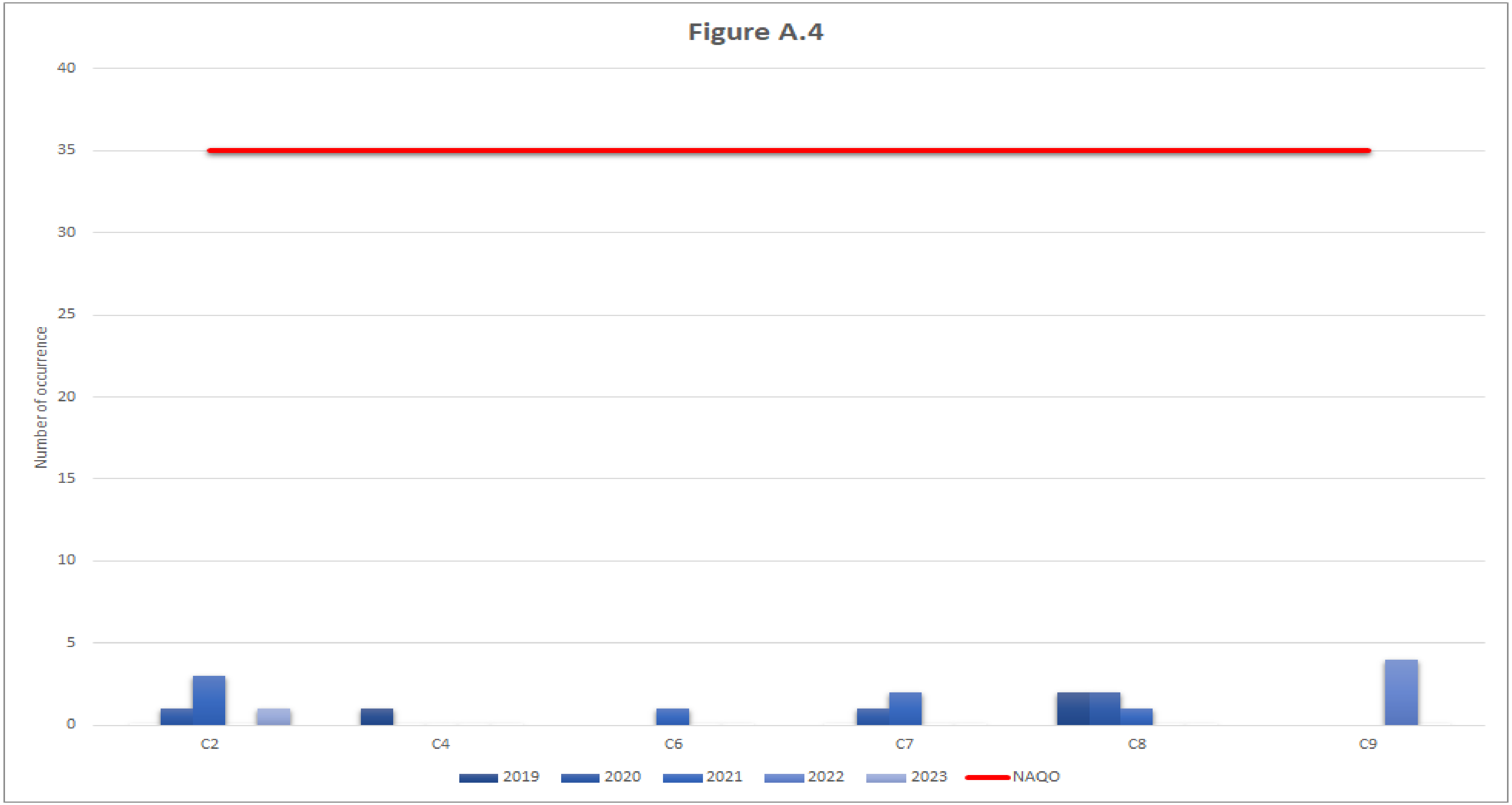


Table A.8 – Annual Mean $PM_{2.5}$ Monitoring Results (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
C2	464925	102129	Kerbside	73.55	73.55	11.19	9.35	10.50	10.47	9.40
C4	465403	103952	Urban Background	99.97	99.97	8.90	9.45	8.33	9.26	8.49
C6	466004	102348	Roadside	99.98	99.98			9.30	9.85	9.89
C7	464397	101270	Roadside	97.66	97.66	9.79	9.40	9.42	8.32	9.15
C9	463933	100509	Roadside	99.95	99.95				9.83	9.14

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.**

Notes:

The Annual Mean concentrations are presented as µg/m³.

All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g., if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.5 – Trends in Annual Mean $PM_{2.5}$ Concentrations.

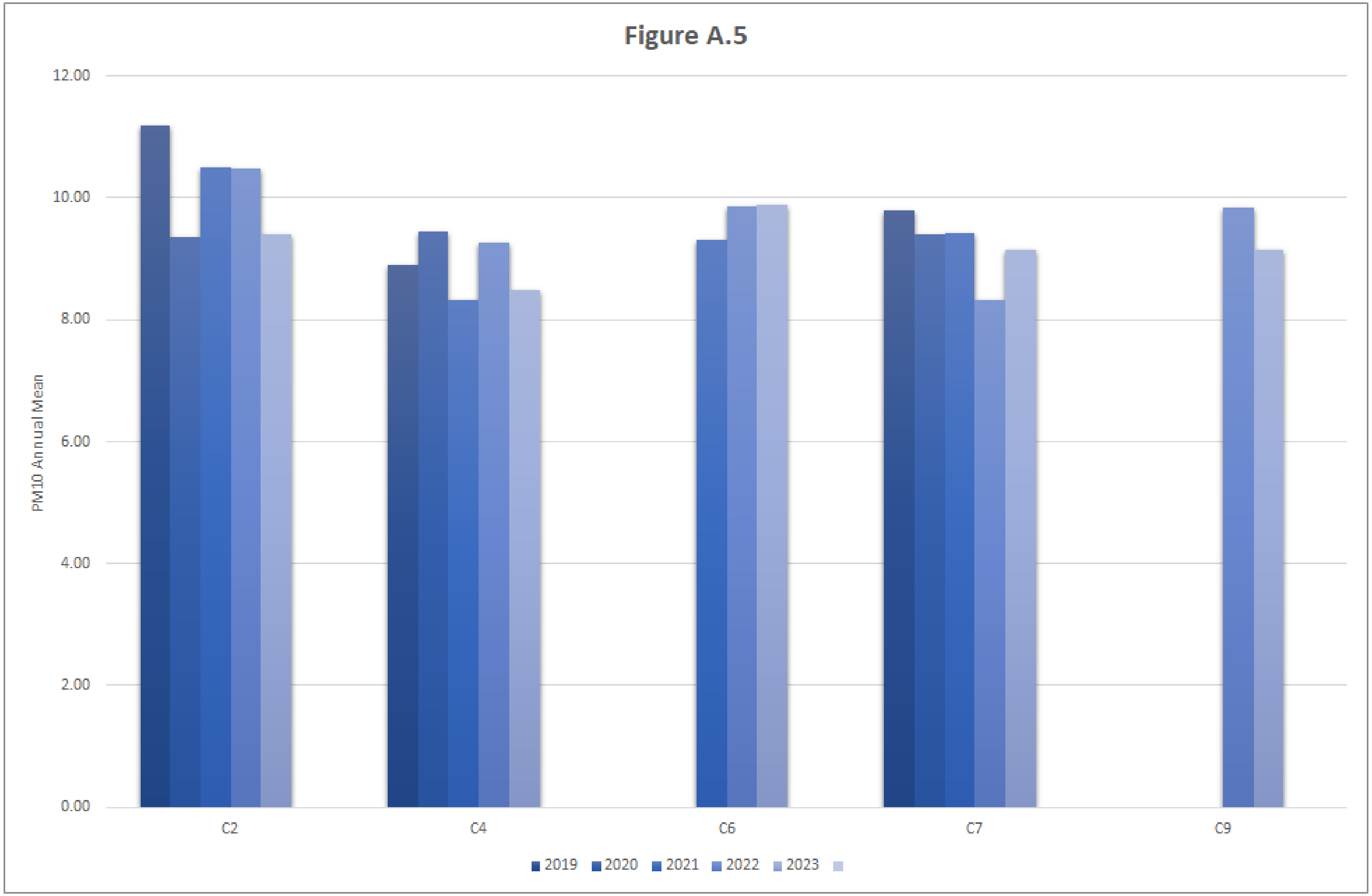


Table A.9 – SO_2 2021 Monitoring Results, Number of Relevant Instances

No SO_2 monitoring is carried out by PCC.

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	Number of 15-minute Means > 266µg/m³	Number of 1-hour Means > 350µg/m³	Number of 24-hour Means > 125µg/m³

Notes:

Results are presented as the number of instances where monitored concentrations are greater than the objective concentration.

Exceedances of the SO_2 objectives are shown in **bold** (15-min mean = 35 allowed a year, 1-hour mean = 24 allowed a year, 24-hour mean = 3 allowed a year).

If the period of valid data is less than 85%, the relevant percentiles are provided in brackets.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g., if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Appendix B: Full Monthly Diffusion Tube Results for 2023

Table B.1 – NO_2 2023 Diffusion Tube Results (µg/m^3).

Site identification details can be found in Table A.2.

NDDT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.885)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
1	463872	99874	34.80	38.87	34.48	35.83	35.76	36.66	29.65	33.25	44.46	36.13	30.06	32.97	35.24	31.19	31.19	
2	463705	99371	19.99	20.47	15.09	14.51	13.64	14.62	10.19	14.11	18.38	16.24	17.06	11.75	15.50	13.72	13.72	
3	463408	99460	25.48	27.49	21.58	18.92	19.93	22.22	15.70	20.01	24.19	19.62	21.93	16.91	21.17	18.73	18.73	
4	463190	100390	32.15	34.25	29.47	26.33	26.11	26.08	25.46	28.81	33.21	31.70	29.34	28.22	29.26	25.90	25.90	
5	464230	102194	28.55	26.11	28.80	25.12	23.50		18.24	18.98	28.78	21.38	24.57	19.41	23.95	21.19	21.19	
6	464331	102197	30.27	30.90	33.03	21.08	18.77	23.22	28.43	27.69	34.05	33.28	29.44	30.47	28.38	25.12	25.12	
7	464291	102279	28.92	26.06	28.91	25.69	18.99	19.54	20.69	23.28	28.54	26.18	24.95	21.76	24.46	21.65	21.65	
8	466690	104355	26.85	26.87	25.10	24.12	14.87	19.80	21.92	22.47	30.77	27.57		21.99	23.85	21.10	21.10	
9	465621	105528	41.05	38.67	25.56	33.77	29.17	29.34	26.41	29.70	36.38	35.50	38.91	37.04	33.46	29.61	29.61	
10	467107	104850	18.47	16.94	15.88	13.62	9.78	11.22	10.39	11.85	17.01	14.97	40.52	13.03	16.14	14.28	14.28	
11	466869	103457	30.22	30.76	22.70	22.17	15.08	19.18	17.62	19.30	27.72	26.88	40.36	24.12	24.68	18.59	18.59	Distance Corrected
14	466109	103736	21.19	22.77	19.21	18.35	17.85	17.46	10.49	15.04	21.92	16.52	40.25	14.96	19.67	17.41	17.41	
15	466120	101324	23.63	30.68	23.93	27.07	21.87	19.01	16.57	20.60	30.36	24.59	33.60	20.67	24.38	21.58	21.58	
16	465474	104205	27.26		25.12	24.10	23.68		16.04				27.47		23.94	23.56	23.56	Annualised
18	466097	101332	31.13	32.32	22.77	22.73	20.67	24.22	19.75	20.91	25.55	26.06	38.39	23.76	25.69	22.73	22.73	
19	466392	100226	32.40	39.00	31.37	35.17	27.74	31.29	24.86	29.08	39.48	32.82	31.60	23.76	31.55	27.92	27.92	
20	466712	99415	27.01	29.59	22.08	25.11	22.56	24.76	14.72	21.34	30.44	22.93	36.00	16.86	24.45	21.64	21.64	
21	465209	98964	33.96	38.93	30.10	34.45	25.88	30.28	28.17	30.41	39.75	35.68	37.94	29.94	32.96	29.17	29.17	
22	464778	99306	26.33	25.81	23.70	24.64	22.62	24.33	17.52	21.72	28.86	25.55	30.94	18.13	24.18	21.40	21.40	
23	464974	99766	40.90	42.13	35.40	33.27	28.21	31.02	23.48	29.38	38.81	34.16	28.69	25.18	32.55	26.37	26.37	Distance Corrected
24	465111	100737	34.48	35.11	33.17	33.36	33.20	32.27	23.94	30.04	39.14	34.92	29.06	27.26	32.16	28.46	28.46	
25	465036	101547	37.67		34.48	34.16	27.64	33.18	30.46	31.09	41.76	40.00	19.00	34.65	33.10	29.29	29.29	
26	464900	101976	46.30	46.87	40.43				37.77	33.67	43.23	42.94	15.88	34.70	37.98	33.61	33.61	
30	464478	101457	40.25	38.98	32.99	32.55	28.42		25.45	30.36	34.64	33.92	40.70	34.02	33.85	29.95	29.95	
34	464425	100893	28.93	24.40	36.14	31.00	25.07	28.80	23.69	27.26	37.30	30.56	34.40	24.64	29.35	25.97	25.97	
35	463837	99759	26.95	30.86	26.79	27.95	27.32	28.41	17.60	23.76	33.99	24.16		17.90	25.97	22.99	22.99	
36	464501	99329	31.89	37.15	25.72	26.37	27.45		17.42	30.46		28.59	30.08	21.73	27.69	24.50	24.50	
42	464552	101940	36.00	39.65	27.99	28.76	24.69	29.92	30.04	30.01	32.90	37.16	31.59	37.35	32.17	28.47	28.47	
43	464774	101922	30.19	38.79	37.70	29.99	25.75	29.45	29.48	27.39	36.04	34.60	28.05	35.70	31.93	28.26	28.26	
44	464336	100833	33.39	37.35	31.09	30.06	26.90	27.16	22.65	28.28	31.17	32.19		28.77	29.91	26.47	26.47	
45	464344	100808	37.41	39.82	32.96	31.73	32.48	31.03	26.83	29.26	36.80	33.44	33.90	27.55	32.77	29.00	29.00	
46	464339	101273	34.10	41.69	34.93	37.56	34.63	39.13	19.27	28.33	44.69	30.88	32.16	25.02	33.53	29.68	29.68	

NDDT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.885)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
47	464586	102125	38.43	45.21	34.97	30.18	19.95	27.94	31.33	23.98	37.23	39.43	28.59	26.08	31.94	28.27	28.27	
48	464597	102119			29.01	27.59	24.47	26.07	26.79	28.37	32.16	32.26	30.15	26.61	28.35	25.09	25.09	
49	463042	100315	24.19	31.39	29.89	27.12	26.73	28.07	24.45	23.24	32.49	31.33	23.80	22.25	27.08	23.97	23.97	
50	463388	100398	37.77	39.24	32.98	29.52	24.35	32.27	30.42	29.97	37.02	38.56	35.00	37.99	33.76	29.87	29.87	
51	463333	100395	30.11	33.18	28.72	26.74	29.37	26.52	22.80	25.63	33.23	30.06	28.47	25.25	28.34	25.08	25.08	
52	463235	100412	30.02	34.94	26.91	25.98	26.06	26.91	22.08	25.14	31.53	29.60	28.01	24.79	27.67	24.48	24.48	
55	463224	99590	25.85	34.22	28.35	22.07	20.46	23.89	20.25	22.69	26.33	24.95	26.73	25.27	25.09	22.20	22.20	
56	463261	99782	32.35	37.47	31.42	29.41	29.32	34.09	29.07	29.03	36.59	31.57	30.15	27.10	31.46	27.85	27.85	
58	463487	99659	26.57	31.15	23.06	23.92	24.45	24.99	22.66	23.84	28.76		26.60	21.47	25.22	22.32	22.32	
59	466263	100334	38.01	35.87	36.38	36.07	31.21	34.26	30.14	19.07	42.29	39.49	25.83	32.43	33.42	29.58	29.58	
60	466201	100478	28.03		29.02	21.28	21.34	23.34	17.00	30.47	25.06	23.34	25.28	20.76	24.08	21.31	21.31	
61	466136	100610	33.67	33.11		29.83	29.00	30.75	18.23	21.64	32.05	28.81	33.76	20.22	28.28	25.03	25.03	
62	466165	100573	18.00	20.07	16.87	17.20	8.62	14.83	11.52	14.09	18.57	13.32	32.04	13.44	16.55	14.65	14.65	
63	466354	100172	28.68	35.56	28.48	31.60	31.12	32.42	18.91	24.15	33.27	25.80	32.29	20.34	28.55	25.27	25.27	
64	466326	100165	38.84	34.76	29.70	28.98	25.23	27.31	27.24	28.08	36.41		41.86	26.22	31.33	27.73	27.73	
65	466681	100373	30.89	32.23	24.79	22.94	18.95	19.89	20.92	22.80	26.56	27.48	47.18		26.79	23.70	23.70	
66	466267	100216	33.72	34.11	25.10	29.22	23.87	25.18	20.54	24.36	31.90	27.10	43.30	22.72	28.43	25.16	25.16	
67	466457	100253	30.13	38.27	31.74	32.67	27.46	29.64	25.43	27.22	36.26	32.43		23.81	30.46	26.96	26.96	
68	466501	100277	31.26	37.10	29.01	28.63	26.67	28.56	24.52	26.32	31.59	32.49	45.15	24.37	30.47	26.97	26.97	
69	466396	100248	31.40		25.72	24.20	23.13	25.74	19.76	23.39		28.58		28.11	25.56	22.62	22.62	
70	466667	99546	28.33	28.32		20.64	22.10	24.81	22.45	16.80	23.69	19.57		14.63	22.13	19.59	19.59	
71	465711	105624	28.44	30.53	23.60	25.62	22.25	21.72	19.90	20.94	26.34	29.24	39.25	25.91	26.14	23.14	23.14	
72	465657	105577	25.91	28.49	22.68	23.58	19.75	18.35	31.18	18.65	26.53	25.40	23.92	21.54	23.83	21.09	21.09	
73	465653	105544	27.47	29.38	24.73	23.21	20.35	20.03	19.04	19.94	28.23	27.18	25.48	22.27	23.94	21.19	21.19	
74	465610	105383	34.73	35.05	30.83	29.94	28.71	27.28	23.01	24.20	32.61	33.35	33.44	23.46	29.72	26.30	26.30	
75	465618	105619	26.34	25.44	24.26	21.62	20.53	19.54	13.88	16.14	25.58	21.76	25.37	18.90	21.61	19.13	19.13	
76	466002	102053	31.30	34.49	26.10	29.91	24.94	28.82	19.24	22.64	30.57	25.86	30.46	25.30	27.47	24.31	24.31	
77	466008	102097	27.44	25.64		17.72	16.75	14.00	17.60	18.68	21.17	28.77	31.02		21.88	19.36	19.36	
78	466523	99599	22.80	27.17	20.94	19.99	19.16	20.56	15.32	17.11	24.94	19.71	44.38	19.25	22.61	20.01	20.01	
80	465204	98978	37.93	41.64	30.82	32.34	33.07	20.26	33.14	26.43		29.73	39.81	27.40	32.05	28.37	28.37	
81	465278	98968	32.43	37.63	25.08	29.87	22.42	27.57	20.82	23.95	32.94	26.37	40.94	21.59	28.47	25.19	25.19	
82	465178	98945	34.43	36.32	26.45	25.12	23.46	25.32	17.66	24.35	28.09	23.30	30.94	19.67	26.26	23.24	23.24	
83	465166	98982	31.52	39.02	27.01	27.37	27.56	25.13	22.33	24.95	30.08	25.16	40.54	26.71	28.95	25.62	25.62	
84	465198	98996	33.92	38.71	29.66	31.64	28.25	31.30	21.37	27.70	36.54	31.47	31.67	21.61	30.32	26.83	26.83	
85	465150	98968	33.53	41.87	27.13	35.76	25.54	30.00	25.49	28.85	39.00	33.95	30.32	28.77	31.68	28.04	28.04	
86	465201	99734	25.99	30.32	26.02	22.37	24.85	25.22	16.02	20.70	28.25	24.65	35.29	17.77	24.79	21.94	21.94	
87	465183	99904	28.73	30.53	21.89	26.39	18.55	19.08	17.05	20.91	25.18	26.90	29.76	22.23	23.93	21.18	21.18	
88	465186	98996	34.97	39.07	28.47	28.30	23.28	26.75	25.94	27.92	32.96	33.64	37.33	32.24	30.90	27.35	27.35	
89	465190	98946	30.04	37.09	24.41	30.55	26.21	28.96	15.80	23.56	31.02	25.14	30.10	20.17	26.92	23.83	23.83	
90	466095	100813	24.31	28.89	20.09	17.69	17.16	19.09	13.95	16.72	23.26	21.31	35.02	17.46	21.24	18.80	18.80	
91	466070	100819	29.90	24.91	23.98	21.43	19.53	19.99	19.26	20.42	27.76	27.80	25.83	22.83	23.64	20.92	20.92	

NDDT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.885)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
92	466525	99736	29.17	28.80	21.20	20.54	18.60	19.86	16.61	19.63	27.17	24.50	35.70	19.50	23.44	20.75	20.75	
93	464826	99500	28.37	35.19	28.63	28.77	25.44	27.26	21.69	27.50	34.04	30.92	30.43	21.75	28.33	25.07	25.07	
96	465465	98937	29.89				17.69		16.70		22.54	20.76	31.39	17.71	22.38	21.91	21.91	Annualised
97	465896	99852	27.85	28.13	18.97	20.27	20.36	19.91	15.47	19.63	25.21	20.22		17.40	21.22	18.78	18.78	
98	466700	100591	23.08	24.66	18.32	19.51	17.21	19.13	12.12	15.10	22.17	19.14	34.41	13.25	19.84	17.56	17.56	
99	466727	100572	23.75	23.46	20.50	17.10	17.42	16.63	15.44	17.92	23.77	23.09	32.31	17.45	20.74	18.35	18.35	
100	467783	105677	20.93	23.83	17.10	18.76	15.76	16.56	11.35	19.07	20.49	26.93	33.35	16.03	20.01	17.71	17.71	
101	467693	105687	26.56	33.71	28.09	28.78	21.44	24.67	20.01	14.49	23.70	18.51	43.40	25.36	25.73	22.77	22.77	
102	464585	105714	25.42	26.88	24.54	21.56	20.23	22.73	21.03	20.75	29.78	27.05	22.03	23.41	23.78	21.05	21.05	
103	465556	103968	26.21	27.37	20.23	21.25	16.68	15.55	11.07	15.11	23.68	20.55	21.57	19.09	19.86	17.58	17.58	
108	464951	102418	40.21	43.14	37.85	29.63	24.48	29.92	31.31	31.74	36.58	37.79	32.93	19.68	32.94	29.15	29.15	
109	464961	102383	28.42	32.88	32.20	29.95	23.65	29.52	27.02	25.59				26.82	28.45	25.18	25.18	
110	464913	102419	28.78	30.57	27.62	18.24	22.22	20.74	23.86	21.24	24.78	27.96	32.44	30.40	25.74	22.78	22.78	
111	464898	102414	25.86	27.11	25.49	21.04	17.82	20.11	19.17	20.54	26.76	26.41	24.28	21.73	23.03	20.38	20.38	
117	463901	100508	54.31	60.19	49.28	45.17	46.73	49.41	44.68	45.85	52.47	50.54	46.96	34.60	48.35	42.79	42.79	
118	463951	100531	49.82	58.54	47.32	53.27	48.68	53.98	36.48	45.00	65.01	52.80	48.38	33.51	49.40	43.72	43.72	
119	464098	100748	35.96	35.38	29.14	25.01	29.03	29.59	25.55	28.09	30.79	47.07	30.95	33.34	31.66	28.02	28.02	
120	464086	100765	42.09		41.94	43.04	39.66	41.92	34.75	39.97	54.19	31.11	40.58	34.88	40.38	35.73	35.73	
121	464930	102071	40.72	49.39	38.27	39.96	36.43	39.80	30.49	31.58	45.67	39.69	32.55	34.70	38.27	33.87	33.87	
122	464918	102090	43.98	42.45	37.86	32.37	30.07	30.84	33.68	31.89	38.82	38.35	30.80	31.99	35.26	31.20	31.20	
124	462491	106553	27.29	30.52	27.55	28.70	19.13	23.81	26.50		31.93	31.13	39.64	29.95	28.74	25.44	25.44	
125	465624	104626	30.11	33.11	26.86	28.76	21.38	24.91	26.53	27.55	38.19	31.81	28.27	27.48	28.75	25.44	25.44	
126	463756	105253	27.88	33.38	33.17	34.72	30.92		19.83	23.90	37.69	30.88	37.70	23.20	30.30	26.81	26.81	
127	463536	105652	29.62	31.95	25.77	27.21	28.36	27.72	21.89	26.48	33.83	30.41	30.04	26.14	28.29	25.03	25.03	
128	464710	102222	28.11	27.91	25.98	20.25	15.89	19.57	23.02	21.28	23.39	28.78		23.89	23.46	20.76	20.76	
129	464711	102239	26.45	32.33	26.88	22.01	17.29	21.22	22.89	20.05	25.69	27.20	37.16	27.93	25.59	22.65	22.65	
130	464986	102344		39.33	35.35	27.50	22.23	28.86	33.20	28.17	36.71	39.24	37.33		32.79	29.02	29.02	
131	464925	101969	40.00	42.70		31.85	25.82	31.32		32.30	35.22				34.17	32.37	32.37	Annualised
132	466344	100139	43.47	37.25	38.18	35.14	33.27	30.67	24.86	29.70	35.08	34.48	44.80	30.11	34.75	30.75	30.75	
133	464882	100475	31.68		26.71	31.27	22.60	27.56	21.03		32.51	26.21	30.62	17.85	26.80	23.72	23.72	
135	464526	105665	30.76	29.83	28.06	27.37	21.36	26.50	20.75	22.41	37.38	30.84	23.37	28.90	27.29	24.15	24.15	
136	464512	105641	36.83	33.91	29.07	35.01	34.60	33.07	28.64	23.28	35.79	35.55	25.09	27.45	31.52	27.90	27.90	
137	464082	105658	43.40		38.00	42.10	34.79	40.60	36.63	38.11	55.07	47.82	24.68	36.44	39.79	35.21	35.21	
138	464067	105633	31.54		28.62	29.71	26.24	27.76	24.51	25.81	34.61	29.20	23.53	27.05	28.05	24.83	24.83	
139	463938	105638	43.59	37.51	34.08	33.83	28.64	31.59	26.33	28.75	33.42	35.18		28.11	32.82	29.05	29.05	
143	465686	103868	29.82	33.72	26.20	31.90	28.68	29.88	23.26	28.97	38.84	31.28	27.68	21.05	29.27	25.91	25.91	
144	465665	103832	40.99	44.19	21.54	30.76	34.64	35.63	25.49	38.00	38.27	35.74	28.01	28.79	33.50	29.65	29.65	
145	464259	100965	56.56	59.56	51.73	27.95	51.54	50.48	45.13	47.20	59.34	53.45	30.17	43.26	48.03	42.51	42.51	
146	465265	105807	20.51	26.15	20.47	24.75	17.56	22.53	17.52	17.32	26.55	23.74	23.28	20.13	21.71	19.21	19.21	
147	465303	105817	25.41	30.88	26.51	22.86	21.37	23.96	20.28	21.71	28.70	28.14	29.55	25.09	25.37	22.45	22.45	
148	464670	105713	39.13	32.69	32.71	36.73	30.36	27.51	18.54	20.09	27.85	29.87	43.75	28.08	30.61	27.09	27.09	

NDDT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.885)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
149	464665	105737	29.65	33.16	35.93	17.54	29.00	32.19	26.16	29.39	44.99	36.93	42.14	18.73	31.32	27.72	27.72	
150	464791	105775	37.56	42.02	37.11	36.72	30.77	34.50	28.84	31.65	44.34	40.91	25.69	25.93	34.67	30.68	30.68	
151	464806	105751	34.56	43.23	29.17	28.31	21.32	24.86		21.50	31.95	27.95	32.19	24.48	29.05	25.71	25.71	
152	465169	105763	38.29	45.56	41.21	35.95	37.73	39.43	31.79	30.36	52.87	47.12	37.18	34.52	39.33	34.81	34.81	
153	465173	105784	36.55	44.28	32.87	45.79	30.23	31.67	27.59	28.90	39.57	36.84	40.63		35.90	31.77	31.77	
154	465337	105726	39.63	45.12	39.33	37.91	30.90	31.87	33.14	32.11	45.04	42.41	43.42	36.67	38.13	33.74	33.74	
155	465350	105748	37.34	42.47	34.45	38.17	34.71	37.13	26.44	28.80	40.43	39.05	35.07	27.37	35.12	31.08	31.08	
156	463936	105617	34.58	38.96	26.63	34.52	22.61	29.53	20.03	22.24	38.71	33.30	26.04	25.95	29.43	26.04	26.04	
157	464471	101099	37.82	38.67	29.45	28.98	27.06	27.79	24.28	31.22	30.17	31.75	34.31	25.42	30.58	27.06	27.06	
158	467322	103333	38.39	45.37	35.29	33.39	37.17	39.72	22.83	27.56	38.79	31.65	29.12		34.48	30.51	30.51	
159	467357	103337	43.07	43.26	34.60	36.86	26.47	26.11	38.63	31.69	43.27	43.40	41.15	39.56	37.34	33.04	33.04	
162	467441	104208	58.09	46.69	44.32	37.87	36.88	34.51	41.44	36.47	45.78	47.21	38.29	34.66	41.85	37.04	37.04	
163	467423	104211	39.69	43.03	40.66	42.36	42.57	46.91	25.80	30.62	53.68	33.14	44.91	24.37	38.98	34.50	34.50	
164	464707	105787	34.28	35.21	34.49	31.81	31.32	32.21	25.44	26.58	41.32	35.18	22.98	30.48	31.78	28.12	28.12	
165	464716	105817	33.71	35.05	30.60	30.13	22.63	22.55	19.49	24.71	35.90	28.79	23.29	31.18	28.17	24.93	24.93	
166	467269	103292	35.05	42.84	28.95	36.87	28.83	32.80	31.70	28.07	37.97	34.21	27.48	24.79	32.46	28.73	28.73	
167	464589	100962	37.65	40.93	28.88	29.15	19.17	26.17	22.18	27.92	32.04	29.73	38.95	28.55	30.11	26.65	26.65	
168	465798	103856	34.38	37.85	29.22	31.21	31.45	31.49	21.52	24.28	33.37	30.89	33.02	21.79	30.04	26.58	26.58	
169	465809	103870	38.83	44.51	32.30	37.38	30.15	35.71	31.93	32.42	42.49	40.42	31.86	33.60	35.97	31.83	31.83	
170	464454	101044	38.65	36.13	31.87	30.76	30.05	28.95	23.10	29.65	32.95	31.17	33.95	28.33	31.30	27.70	27.70	
171	464423	101047	29.61	32.37	26.56	26.86	26.28	24.44	18.46	24.18	27.84	27.12	27.23	20.06	25.92	22.94	22.94	
172	464365	101038	43.33	44.86	33.60	31.44	30.39	28.98	25.05	27.52	29.54	33.11	34.75		32.96	29.17	29.17	
173	465161	100081	40.09	46.12	38.87	29.03	39.72	40.90	29.29	32.40	45.63	39.82	24.42	27.21	36.12	31.97	31.97	
174	464606	100961	34.11	34.50	27.53	25.44	22.10	19.87	17.88	23.30	28.74	26.18	36.92	24.93	26.79	23.71	23.71	
175	464478	101110	41.91	43.63	30.92	34.47	25.55	31.47	35.09	34.31	42.88	36.42	35.30	34.01	35.50	31.41	31.41	
176	467269	103275	40.30	40.50	28.04	28.69		28.45	20.56	23.53	30.75	28.52	28.76	19.02	28.83	25.51	25.51	
178	465679	103987	45.76	44.37		35.25	29.05	28.05	27.13	31.02	42.36	38.00	28.86	32.34	34.74	30.75	30.75	
179	464735	105784	27.28	32.54	26.53	31.08	26.28	27.93	22.09	26.10	33.05	32.23	30.48	25.07	28.39	25.12	25.12	
181	464299	101324	29.86	31.82	28.73	31.66	23.31	28.72	18.26	23.30	26.10	26.26	32.77	25.67	27.20	24.08	24.08	
182	464289	101338	41.45	35.38	33.09	25.26	25.13		25.99	23.87	34.09	32.05	32.29	23.34	30.18	26.71	26.71	
183	464222	101346	31.11	29.96	30.12	27.12	24.36	26.15	18.42	22.66	25.75	25.01	28.29	19.15	25.68	22.72	22.72	
184	464211	101346	32.99	27.58	26.94	26.25	24.97	25.26	14.75	23.45	24.65	23.96	30.44	22.32	25.30	22.39	22.39	
185	465976	104576	24.66	28.70	19.67	26.10	18.71	20.63	21.02	22.71	31.92	27.96	28.80	23.87	24.56	21.74	21.74	
188	464390	101510	32.79	32.91	26.98	22.05	20.12	26.66	22.94	25.81	28.17	24.00	30.92	26.43	26.65	23.58	23.58	
189	464386	101532	34.37	35.18	24.58	26.44	22.84	28.73	21.12	26.94	28.07	25.03	30.53	30.35	27.85	24.65	24.65	
190	464292	101382	30.31	33.10	26.91			27.97	21.49	29.51	27.17	29.24	26.40	25.24	27.73	24.54	24.54	
191	464267	101401		32.64	29.39		24.17	30.74		24.79	29.23	25.56	35.88	28.94	29.04	25.70	25.70	
192	465114	101370	37.14	46.05	35.51	38.95	41.96	43.78	25.27	29.20	43.40	33.88	19.54	25.77	35.04	31.01	31.01	
193	465297	100005	34.73	41.27	33.15	34.18	28.61	28.05	28.90	29.03	40.58	35.93	34.09	31.92	33.37	29.53	29.53	
194	465138	101343	35.14	41.93	35.50	38.00	26.84	35.50	31.63	32.74	42.76	35.78	21.05	33.39	34.19	30.26	30.26	
213	465104	101319	47.62	49.67	40.54	44.09	38.93	40.80	37.32	40.97	46.70	49.32		42.91	43.53	38.53	38.53	

NDDT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.885)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
214	463808	100232		42.02	38.71	36.91	34.48	38.96	34.89	34.62	45.59		37.83	31.39	37.54	33.22	33.22	
217	465089	100462	35.58	40.48	30.67	29.89	25.77	29.09	22.00	25.70	32.02	31.34	30.62	37.06	30.85	27.30	27.30	
218	465091	100452	40.52	44.72	36.18	37.36	32.73	36.97	30.47	32.96	43.79	39.87	32.18	27.23	36.25	32.08	32.08	
220	464404	101962	47.41	43.45	41.21	31.91	34.38	41.90	40.36	32.15	43.01	43.87	46.29	35.91	40.16	35.54	35.54	
221	464419	101931	41.05	38.59	34.25	28.36	27.84	29.46	28.06	26.52	32.88	33.49	39.00	43.00	33.54	29.69	29.69	
222	464409	100929		32.81	29.10	25.75	26.45	26.15		26.26	32.45	30.85	32.32	27.95	29.01	25.67	25.67	
223	464970	101970	38.99	38.52	29.77	30.30	23.99	27.20	28.14	26.91	33.86	33.21	30.06	31.87	31.07	27.50	27.50	
224	464992	101983	37.95	38.53	26.46	26.49	21.90	24.65	22.91	23.99	26.91	31.56	36.49	29.24	28.92	25.60	25.60	
225	464407	99352	38.74	40.50	28.76	27.07	31.13	29.39	19.26	26.08		29.57	27.34	21.80	29.06	25.72	25.72	
226	464384	99347	31.71	25.82	29.11	30.49	26.85	29.61	23.83	26.98	35.59	30.11	27.78	25.42	28.61	25.32	25.32	
227	467389	103185	45.37	45.78	35.41	32.80	31.40	31.70	34.84	34.16	37.50	42.94	38.83	35.14	37.16	32.88	32.88	
228	467358	103189	34.79	39.78	29.72	33.58	30.66	34.88	19.62	21.42	35.02	27.70	39.65	24.16	30.92	27.36	27.36	
229	467429	104140	53.03	44.39	42.35	35.71	35.29	33.37	32.46	34.22	39.91	44.31	36.20	32.22	38.62	34.18	34.18	
230	467411	104143	37.38	38.09	35.35	38.54	38.20	43.91	23.22	28.00	49.01	34.90	41.81	26.80	36.27	32.10	32.10	
231	465129	100404	38.03	38.14	29.36	30.29	27.71	27.97	21.66	27.33	32.76	29.72	31.21	25.59	29.98	26.53	26.53	
232	465114	100529	42.36	48.57	37.55	39.73	37.43	35.73	33.66	34.45	43.54	41.07	29.39	34.95	38.20	33.81	33.81	
233	465113	100745	43.63	44.59	38.56	37.04	38.53	38.12	30.86	34.41	44.62	39.80	32.70	31.05	37.83	33.48	33.48	
234	465131	100771	29.84	31.98	25.58	23.44	23.96	19.81	16.45	20.64	23.05	24.13	33.03	22.73	24.55	21.73	21.73	
235	465148	100107	33.73		30.79	41.47	26.00	24.97	23.38	25.46	34.00	33.64	22.74	25.98	29.29	25.92	25.92	
236	465143	100404	39.40	49.99	41.12	39.83	39.32	40.32	27.63	32.71	46.01	36.63	33.37	25.50	37.65	33.32	33.32	
237	465127	100526	30.56	38.14		33.53	29.41	31.80	25.25		37.30	29.92	30.78	24.24	31.09	27.52	27.52	
238	466060	99826	34.72	35.97	24.82	24.80	22.37	22.90	17.14	23.33	25.50	25.22	39.77	23.77	26.69	23.62	23.62	
239	466056	99838	33.52	38.31	26.11	29.27	24.64	25.30	20.65	23.83	30.19	28.08	27.99	23.85	27.64	24.47	24.47	
240	464906	102439	26.78	30.57	29.04	24.41	19.09	22.50	20.32	21.00	28.01	27.14	28.37	22.11	24.94	22.08	22.08	
241	466467	99627	38.33	38.83	27.82	25.64	25.61	25.49	18.52	22.33	29.41	30.30	31.47	25.01	28.23	24.98	24.98	
242	466453	99649	30.57	29.91	22.10	21.61	17.69	18.26	15.31	17.88	23.82	21.08	23.05	18.05	21.61	19.12	19.12	
243	463205	99608	30.49	36.54	31.04	24.09	25.27	26.70	22.17	26.12	32.26	28.97	34.11	25.21	28.58	25.30	25.30	
244	463266	99799	34.18	30.70	28.37	26.03	25.68	28.04	23.14	26.50	31.51	28.41	26.50	24.09	27.76	24.57	24.57	
245	463047	100329	27.68	29.94	30.99	29.18	26.74	27.74	28.86	26.45	39.45	32.87	27.40	26.34	29.47	26.08	26.08	
246	463053	100361	32.39	39.17	33.82	31.64	34.47	34.15	31.50	31.69	43.17	40.20		29.22	34.68	30.69	30.69	
247	464929	100133	40.04	38.95	33.74	32.68	28.94	27.53	23.87	29.72	37.15	33.24	29.94	26.53	31.86	28.20	28.20	
248	464929	100066	32.49	39.80	32.30	35.13	31.19	32.00	28.05	30.86	41.68	35.32	32.80	26.79	33.20	29.38	29.38	
249	464858	100537	36.48	35.22	39.66	27.16	23.44	24.20	24.41	26.65	33.54	31.53	23.98	29.56	29.65	26.24	26.24	
250	464850	100523	26.53	31.24	28.65	28.88	26.27	29.05	17.61	22.02	33.59	24.40	37.88	17.46	26.97	23.86	23.86	
251	464345	101022	44.97	42.22	33.99	32.42	31.90	33.89	25.98	32.05	34.53	36.13	36.71	28.67	34.45	30.49	30.49	
252	464192	100895	38.73	35.82	31.10	49.61	27.29	26.49	24.65	26.97	36.57	30.61	48.25	24.60	33.39	29.55	29.55	
253	463482	99523	30.05	32.39	25.10	22.85	23.53	26.37	22.46	24.36	29.28	24.35	25.93	20.84	25.63	22.68	22.68	
254	463478	99506	29.50	29.93	23.42	23.01	22.11	26.93	21.30	23.63	27.80	24.16	24.91	20.34	24.75	21.91	21.91	
255	464311	101021	34.38	39.68	30.25	33.23	28.29	31.47	27.13	31.41	40.88	36.29	31.34	24.79	32.43	28.70	28.70	
256	463832	99761	33.61	40.73	34.51	31.33	36.15	34.17	23.09	28.31	41.62	31.51	29.67	19.02	31.98	28.30	28.30	
257	463819	99763	29.19	29.52	25.67	28.60	22.57	22.76	20.03	21.99	28.28	25.68	27.94	23.08	25.44	22.52	22.52	

NDDT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.885)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
258	464970	101961	41.95	45.98	33.39	30.70	23.24	29.18	31.48	29.92	33.49	36.37	37.41	36.85	34.16	30.23	30.23	
259	464559	101941	42.07	46.56	34.58	32.67	29.41	33.67	33.12	32.72	39.25	41.23	31.92	36.43	36.14	31.98	31.98	
260	464784	101939	46.92	47.56	45.75	40.31	33.88		35.39	34.99	45.03	42.39	37.53	32.79	40.23	35.60	35.60	
261	464772	101924	39.80	39.07	33.51	33.49	27.66	31.08	28.75	28.13	35.86	36.40	37.04	36.86	33.97	30.06	30.06	
262	465049	101552	42.62	43.94	36.68	38.88	37.75	35.31	22.75	30.79	40.96	35.21	28.67	35.93	35.79	31.68	31.68	
263	465046	101536	44.11	42.56	38.23	38.43	34.23	36.67	34.66	35.53	45.27	43.62	23.49	32.76	37.46	33.16	33.16	
264	463860	99861	40.99	45.72	39.14	34.01	39.60	40.66	29.70	34.07	45.39	37.70	36.76	24.99	37.39	33.09	33.09	
265	463855	99871	30.94	35.71	29.23	30.68	28.44	28.45	19.16	22.97	34.11	26.74	25.75	22.48	27.89	24.68	24.68	
266	464966	102417	33.55	37.00	34.74	29.63	26.70	28.48	27.96	27.63	36.05	34.79	34.80	27.38	31.56	27.93	27.93	
267	464968	102420	44.81	45.96	43.71	34.18	32.44	35.42	38.06	35.30	42.72	44.34	29.70	30.32	38.08	33.70	33.70	
268	464465	101452	44.81	46.34	38.10	36.57	32.12	35.23	30.65	33.87	39.20	36.74	41.95	28.53	37.01	32.75	32.75	
269	463750	99507	28.52	30.43	24.02	26.04	19.24	28.49	21.69	23.25	30.25	23.86	23.84	19.11	24.90	22.03	22.03	
270	463753	99522	23.17	28.18	21.83	21.84	26.90	24.29	15.98	24.43	27.67	26.08	23.95	17.93	23.52	20.82	20.82	
271	464337	100810	32.26	33.14	32.72	28.93	26.27	26.73	21.50	24.86	32.04	26.93	27.31	23.29	28.00	24.78	24.78	
272	464324	100830	36.04	41.27	36.58	34.03	34.11	35.33	29.95	31.64	40.65	37.19	33.78	30.51	35.09	31.06	31.06	
273	465691	103860	42.24	48.70	39.53	43.48	41.29	42.56	31.39	29.36	50.86	45.21	28.52	26.28	39.12	34.62	34.62	
277	465013	102342	39.89	37.86	32.65	28.47	28.69	26.33	21.22	28.54	32.25	36.87	42.97	34.53	32.52	28.78	28.78	
278	465025	102353	35.02	31.87	28.61		22.56	25.75	26.25	25.80	30.14	32.72	30.05	39.68	29.86	26.43	26.43	
279	463477	99670	30.34	32.56	26.62	27.13	25.58	28.01	21.31	25.37	33.06	28.57	28.77	23.64	27.58	24.41	24.41	
280	463491	99681	31.70	36.75	28.74	29.41	22.99	24.32	20.14	22.90	31.75	26.14	27.95	26.96	27.48	24.32	24.32	
281	464540	102065	39.05	36.35	35.45	30.69	23.07	28.55	32.56	32.38	35.42	41.45	35.20	33.76	33.66	29.79	29.79	
282	466444	100251	45.09	50.93	39.90	41.08	34.66	38.92	31.67	36.33	46.62	41.58	29.32	36.09	39.35	34.82	34.82	
283	466439	100266	31.23	37.39	29.21	27.75	21.42	23.80	18.47	19.98	25.50	24.42	30.71	27.63	26.46	23.42	23.42	
284	464861	99519	37.37	35.75	27.32	23.08	24.86	26.76	20.68	23.48	29.28	27.23	34.49	23.27	27.80	24.60	24.60	
285	464839	99523	39.10	40.70	30.66	30.39	28.20	23.72	22.08	25.65	32.22	33.24	37.80	28.17	31.00	27.43	27.43	
286	464759	99308	38.09	39.78	32.57	30.74	29.08	28.35	25.97	29.87	35.47	37.85	28.10	30.05	32.16	28.46	28.46	
287	465082	99963	26.86	28.09	21.51	25.48	18.01	22.13	17.80	20.99	23.85	20.62	26.94	15.09	22.28	19.72	19.72	
288	464961	99772	38.09	38.18	30.28	29.05	30.13	28.06	22.27	26.59	33.05	31.16	31.91	25.31	30.34	26.85	26.85	
289	465064	99934	33.98	38.42	27.87	23.72	20.54	21.59	14.90	21.08	28.90	29.99	22.09	22.69	25.48	22.55	22.55	
290	464835	99901	26.79	30.89	21.80	22.50	20.19	28.84	19.55	18.06	29.35	27.87	28.69	19.36	24.49	21.67	21.67	
291	464832	99885	30.55	31.07	23.97	24.13	28.00	22.22	12.84	24.46	25.38	23.93	32.06	21.29	24.99	22.12	22.12	
292	464554	102051	52.39	44.23	40.83	34.23	26.25	33.58	44.18	33.09	38.56	37.45	43.49	45.48	39.48	34.94	34.94	

☒ **All erroneous data has been removed from the NO_2 diffusion tube dataset presented in Table A.2**

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16**

☒ **Local bias adjustment factor used.**

☒ **National bias adjustment factor used.**

☒ **Where applicable, data has been distance corrected for relevant exposure in the final column.**

☒ **Portsmouth City Council confirm that all 2021 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System**

Notes:

Exceedances of the NO_2 Annual Mean objective of 40µg/m^3 are shown in **bold**.

NO_2 Annual Means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

See Appendix C for details on bias adjustment and annualisation.

Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

New or Changed Sources Identified Within Portsmouth 2023

PCC has not identified any material new sources relating to AQ within the reporting year of 2023.

Additional Air Quality Works Undertaken 2023

PCC has not completed any additional works within the reporting year of 2021 save for additional monitoring locations as previously set out.

QA/QC of Diffusion Tube Monitoring

The continuous NO_2 monitoring network is complemented by a secondary network of passive NO_2 tubes that are located in suspected AQ hot spots. In addition, tubes are located at the relevant continuous monitoring sites to enable data adjustment. At a selection of sites three tubes are exposed simultaneously and the data compared. Where the data is consistent, the results are averaged. Where the tubes results show significant differences, the data is discounted.

This method provides a cost-effective means of monitoring a wide range of monitoring locations. The accuracy of tubes however is variable depending on the tube handling procedures, the specific tube preparation, adsorbent mixture and the analysing laboratory. These tubes are supplied and analysed by Gradko International Ltd.

PCC's NO_2 diffusion tubes are prepared by the supplier using 50% Triethanolamine (TEA) in acetone. These tubes were exposed for one-month periods in accordance with LAQM.TG (16) guidance [5].

Tube Handling Procedures

Once received by post, NO_2 tubes are stored in cool location within the supplied packaging until use. The tube end caps are not removed until the tube has been placed at the monitoring location at the start of the monitoring period. The exposed tubes are

recapped at the end of the monitoring period and returned as quickly as possible to a clean cool storage environment then sent to GIL for analysis.

Laboratory QA / QC

GIL is a UKAS accredited company for the analysis of NO_2. GIL take part in the WASP scheme on a quarterly basis. An inter-comparison of results from other laboratories demonstrates that GIL's performance is good in terms of accuracy and precision.

Data Ratification

Once analysed, the NO_2 diffusion tubes results which were significantly within the documented limit of detection, were laboratory blank corrected.

The returned results are closely examined on a monthly basis to identify any spurious data (e.g., very high or very low data).

The data is subjected to a further series of corrections for the monitored period under consideration:

- Firstly, PCC use the data from the local co-location study of NO_2 diffusion tubes to calculate the bias following the approach prescribed in Box 6.4 of LAQM TG using the appropriate continuous monitoring data from the LAQM network for individual NO_2 monitored sites according to the site criteria.

- Secondly, the estimation of the NO_2 Annual Mean is deduced for individual NO_2 diffusion tube monitored locations following the approach prescribed in Box 6.5 of LAQM TG using data from both Portsmouth and Southampton AURN stations.

- The corrected results are then reported and used for comparison only, i.e., not for verification processes in the Further Assessment (Review and Assessment process).

Diffusion Tube Annualisation

Some diffusion tube monitoring locations within PCC recorded data capture of between 25% and 75% therefore, data annualisation was required at 5 locations (Sites, 16, 96, and 131).

Site identification details can be found in **Table A.2**.

Table C.1 – Annualisation Summary

Site Id	Annualisation FactorBurrfields Road	Annualisation Factor Mile End Road	Annualisation Factor (AURN)	Annualisation Factor (Defra)	Agverage Annulisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Bias Corrected Annualised Annual Mean
16	1.69	0.99	0.79	0.99	1.11	23.94	26.62	23.56
96	1.76	1.09	0.80	1.04	1.17	21.13	24.75	21.91
131	1.60	0.93	0.76	0.99	1.07	34.17	36.58	32.37

Diffusion Tube Bias Adjustment Factors (BAF(s))

The diffusion tube data presented within the 2024 ASR have been corrected for bias using a local adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser.

LAQM.TG16 provides guidance about the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local Bias Adjustment Factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides Bias Adjustment Factors for the relevant laboratory and preparation method.

PCC has applied a local bias adjustment factor of 0.885 to the 2023 NDDT monitoring data. A summary of bias adjustment factors used by PCC over the past three years is presented in Table A.2 in Appendix C, which presents data from the three Portsmouth based roadside CAQMSs.

Table A.2 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2023	Local	N/A	0.885
2022	Local	N/A	0.875
2021	Local	N/A	0.845

The NDDT data that had data capture greater than 75% and the data that was subjected to annualisation only have been subjected to Bias Adjustment Factor using locally generated Bias Correction Factors from local co-location study involving the exposure of a triplicate NDDTs at each of Burrfields Road, Mile End Road stations and Defra's CAQMSs.

Just like the 2023 ASR the Bias Adjustment Factors were generated from the 5 long-term continuous monitoring stations in the city including Defra's following the approach prescribed within LAQM.TG, using Defra's calculating precision and accuracy spreadsheet provided by Defra.

In this ASR, and to be consistent with 2023 ASR the averaged Bias Adjustment Factor was generated using Bias Correction Factors from only Burrfields Road, Mile End Road, and Anglesea Road (Defra):

- Tubes exposed at Burrfields Road, and Mile End Road stations (both roadside stations) generated 0.82 and 0.88 respectively as the Bias Adjustment Factors
- Tubes exposed at Defra's station (roadside station) generated 0.96 as the Bias Adjustment Factor.

The Bias Adjustment Factors from all **but** London Road and AURN stations were averaged using the methodology prescribed in the LAQM.TG. The 2023 NDDT survey results have consequently been bias adjusted using 0.885.

The three generated Bias Adjustment Factors for individual stations are tabulated as follows.

Table C3 – Local Bias Adjustment Factor Calculation

CAQMSs	Criteria	Bias Factor A	Bias Factor B
Burrfields Road	**Roadside**	0.82	0.22
Mile End Road	**Roadside**	0.88	0.13
Anglesea Road (Defra)	**Roadside**	0.96	0.04
Mean "Bias B"			0.130
(Mean "Bias B")+1			1.130
Overall average "Bias Factor" (1/((Average "Bias B")+1)			**0.885**

R4: Burrfields Road Station

Adjustment of DUPLICATE or TRIPLICATE Tubes

AEA Energy & Environmen
From the AEA group

Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 μgm^{-3}	Tube 2 μgm^{-3}	Tube 3 μgm^{-3}	Triplicate Average	Standard Deviation	CV	95% CI mean	Data Quality Check: Diffusion Tubes Precision Check
1	03/01/2023	01/02/2023	33.03	34.83	37.82	35.2	2.42	6.88	6.02	Good
2	01/02/2023	01/03/2023	35.65	35.53	35.88	35.7	0.18	0.50	0.44	Good
3	01/03/2023	03/04/2023	27.37	29.18	29.73	28.8	1.23	4.29	3.07	Good
4	03/04/2023	03/05/2023	28.79	23.98	27.29	26.7	2.46	9.22	6.11	Good
5	03/05/2023	30/05/2023	22.56	22.52	25.32	23.5	1.60	6.83	3.98	Good
6	30/05/2023	03/07/2023	26.38	24.96	25.77	25.7	0.71	2.77	1.77	Good
7	03/07/2023	31/07/2023	22.06	23.14	23.55	22.9	0.77	3.37	1.92	Good
8	31/07/2023	04/09/2023	24.66	24.99	25.48	25.0	0.41	1.65	1.02	Good
9	04/09/2023	02/10/2023	32.97	30.49	31.08	31.5	1.29	4.11	3.21	Good
10	02/10/2023	30/10/2023	28.71	31.84	30.53	30.4	1.57	5.18	3.91	Good
11	30/10/2023	05/12/2023	29.76	29.15	32.69	30.5	1.89	6.19	4.70	Good
12	05/12/2023	02/01/2024	29.68	25.44	26.54	27.2	2.20	8.08	5.46	Good
13										

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

Jaume Targa, for AEA
Version 04 - February 2011

Site Name/ ID:

Adjusted measurement (95% confidence level)
Without periods with CV larger than 20%
Bias calculated using 12 periods of data
Tube Precision: 5 Automatic DC: 100%
Bias factor A: 0.82 (0.79 - 0.86)
Bias B: 22% (16% - 27%)
Information about tubes to be adjusted
Diffusion Tube average: 29 μgm^{-3}
Average Precision (CV): 5
Adjusted Tube average: 23 +/- 1 μgm^{-3}

Adjusted measurement (95% confidence level)
with all data
Bias calculated using 12 periods of data
Tube Precision: 5 Automatic DC: 100%
Bias factor A: 0.82 (0.79 - 0.86)
Bias B: 22% (16% - 27%)
Information about tubes to be adjusted
Diffusion Tube average: 29 μgm^{-3}
Average Precision (CV): 5
Adjusted Tube average: 23 +/- 1 μgm^{-3}

R5: Mile End Road Station

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 μgm^{-3}	Tube 2 μgm^{-3}	Tube 3 μgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean	Automatic Method: Period Mean	Automatic Method: Data Capture (% DC)	Data Quality Check: Tubes Precision Check	Data Quality Check: Automatic Monitor Data
1	05/01/2023	02/02/2023	30.45	33.90	35.20	33.19	2.45	7	6.1	33.00	100.00	Good	Good
2	02/02/2023	28/02/2023	35.82	31.82	36.53	34.73	2.54	7	6.3	34.04	96.15	Good	Good
3	28/02/2023	04/04/2023	31.17	30.67	29.92	30.59	0.63	2	1.6	26.45	100.00	Good	Good
4	04/04/2023	03/05/2023	28.14	26.29	26.11	26.84	1.12	4	2.8	25.37	100.00	Good	Good
5	03/05/2023	31/05/2023	29.02	30.18	26.09	28.43	2.10	7	5.2	26.05	100.00	Good	Good
6	31/05/2023	04/07/2023	28.11	27.74	28.32	28.06	0.30	1	0.7	22.15	100.00	Good	Good
7	04/07/2023	01/08/2023	20.58	20.66	20.70	20.64	0.06	0	0.2	16.69	100.00	Good	Good
8	01/08/2023	05/09/2023	23.71	25.74	25.31	24.92	1.07	4	2.7	23.06	100.00	Good	Good
9	05/09/2023	03/10/2023	27.77	26.55	26.44	26.92	0.74	3	1.8	24.25	100.00	Good	Good
10	03/10/2023	31/10/2023	26.77	28.33	27.24	27.45	0.80	3	2.0	24.25	100.00	Good	Good
11	31/10/2023	06/12/2023	37.52	37.82	38.63	37.99	0.58	2	1.4	27.93	100.00	Good	Good
12	06/12/2023	03/01/2024	23.73	22.29	22.90	23	0.7	3	1.8	19.69	100.00	Good	Good
13													
											Overall survey -->	Good precision	Good Overall DC

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

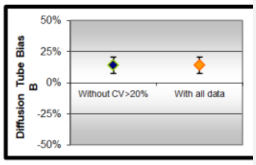
(Check average CV & DC from Accuracy calculations)

Site Name/ ID: Mile End Road

Precision 12 out of 12 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval)
without periods with CV larger than 20%
Bias calculated using 12 periods of data
Bias factor A 0.88 (0.83 - 0.94)
Bias B 13% (6% - 20%)
Diffusion Tubes Mean: 29 μgm^{-3}
Mean CV (Precision): 4
Automatic Mean: 25 μgm^{-3}
Data Capture for periods used: 100%
Adjusted Tubes Mean: 25 (24 - 27) μgm^{-3}

Accuracy (with 95% confidence interval)
WITH ALL DATA
Bias calculated using 12 periods of data
Bias factor A 0.88 (0.83 - 0.94)
Bias B 13% (6% - 20%)
Diffusion Tubes Mean: 29 μgm^{-3}
Mean CV (Precision): 4
Automatic Mean: 25 μgm^{-3}
Data Capture for periods used: 100%
Adjusted Tubes Mean: 25 (24 - 27) μgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

DEFRA: Anglesea Road Station

Adjustment of DUPLICATE or TRIPLICATE Tubes

AEA Energy & Environmen
From the AEA group

Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 µgm⁻³	Tube 2 µgm⁻³	Tube 3 µgm⁻³	Triplicate Average	Standard Deviation	CV	95% CI mean	Data Quality Check: Diffusion Tubes Precision Check
1	05/01/2023	02/02/2023	29.95	32.33		31.1	1.69	5.41	15.14	Good
2	02/02/2023	01/03/2023	31.34	32.81	31.85	32.0	0.75	2.34	1.86	Good
3	01/03/2023	04/04/2023	28.58	28.18	27.01	27.9	0.82	2.93	2.04	Good
4	04/04/2023	04/05/2023	25.22	24.32	25.86	25.1	0.77	3.08	1.92	Good
5	04/05/2023	31/05/2023	25.63	23.96	21.88	23.8	1.88	7.87	4.66	Good
6	31/05/2023	04/07/2023	24.69	24.39	25.53	24.9	0.59	2.38	1.47	Good
7	04/07/2023	01/08/2023	23.12	24.20	19.26	22.2	2.60	11.71	6.45	Good
8	01/08/2023	05/09/2023	24.79	25.44	23.94	24.7	0.76	3.06	1.88	Good
9	05/09/2023	03/10/2023	28.74	28.68	28.05	28.5	0.39	1.35	0.96	Good
10	03/10/2023	31/10/2023	28.53	28.41	29.52	28.8	0.61	2.11	1.51	Good
11	31/10/2023	06/12/2023	27.19	25.44	27.13	26.6	0.99	3.73	2.47	Good
12	06/12/2023	03/01/2024	29.44	26.31	26.13	27.3	1.86	6.82	4.63	Good
13										

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

Jaume Targa, for AEA

Site Name/ ID:

Version 04 - February 2011

Adjusted measurement (95% confidence level)
Without periods with CV larger than 20%
Bias calculated using 12 periods of data
Tube Precision: 4 Automatic DC: 100%
Bias factor A: 0.96 (0.9 - 1.03)
Bias B: 4% (-3% - 11%)
Information about tubes to be adjusted
Diffusion Tube average: 27 µgm⁻³
Average Precision (CV): 4
Adjusted Tube average: 26 +/- 2 µgm⁻³

Adjusted measurement (95% confidence level)
with all data
Bias calculated using 12 periods of data
Tube Precision: 4 Automatic DC: 100%
Bias factor A: 0.96 (0.9 - 1.03)
Bias B: 4% (-3% - 11%)
Information about tubes to be adjusted
Diffusion Tube average: 27 µgm⁻³
Average Precision (CV): 4
Adjusted Tube average: 26 +/- 2 µgm⁻³

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, some non-automatic Annual Mean NO_2 concentrations corrected for distance are presented in Table B.1.

Table C4 – NO_2 Fall off With Distance Calculations (concentrations presented in µg/m³

Ste Id	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitoring Concentration (annulised and Bias Adjusted)	Background Concentration	Concentration Predicted at Receptor	Comments
11	5.03	18.2	24.68	15.01	21	
23	2.56	4.83	32.55	15.01	29.8	

Where a NNDT is located at some distance from the receptor a distance correction is deployed to predict the level of the pollutant at the façade of the sensitive premises. This has been carried out using the calculator made available via 'Air Quality Consultants'. This tool is provided to LA to predict the Annual Mean NO_2 concentration for a receptor location that is close to a monitoring site, but nearer or further to the kerb than the monitor.

Two NDDT locations were however subjected to a further adjustment as the monitoring points at these locations are distant from the façade of the nearest relevant exposure. These two locations required distance correction during 2023 for historical purpose:

- ***106 Victoria Road North (Site 23).***

BUREAU VERITAS

Enter data into the pink cells

Step 1	How far from the KERB was your measurement made (in metres)?	2.56	metres
Step 2	How far from the KERB is your receptor (in metres)?	4.83	metres
Step 3	What is the local annual mean background NO_2 concentration (in µg/m³)?	15.01	µg/m³
Step 4	What is your measured annual mean NO_2 concentration (in µg/m³)?	32.55	µg/m³
Result	The predicted annual mean NO_2 concentration (in µg/m³) at your receptor	29.8	µg/m³

- ***Anchorage Road, Column 6 (Site11).***

Enter data into the pink cells

Step 1	How far from the KERB was your measurement made (in metres)?	5.03	metres
Step 2	How far from the KERB is your receptor (in metres)?	18.2	metres
Step 3	What is the local annual mean background NO_2 concentration (in µg/m^3)?	15.01	µg/m^3
Step 4	What is your measured annual mean NO_2 concentration (in µg/m^3)?	24.68	µg/m^3
Result	The predicted annual mean NO_2 concentration (in µg/m^3) at your receptor	21.0	µg/m^3

QA/QC of Automatic Monitoring

Continuous Air Quality Monitoring, Quality Assurance and Quality Control

PCC manages 5 CQAMS. These are all fully equipped with PCC DEFRA / NETCEN approved real-time automatic continuous monitoring analysers. These are sophisticated automatic monitoring systems housed in purpose built air-conditioned enclosures. These analysers measure and record in real-time a combination of NO_2, PM_{10} and $PM_{2.5}$.

PCC compiled continuous AQ monitoring data for the Further Assessment using Horiba's APNA-370, NO_2 based on the chemiluminescent analysis method.

Routine site operations

PCC employs a dedicated staff member to operate the network of CAQMS. He is trained in all aspects of the monitoring processes including routine site operations, field calibrations and data ratification. He is also the NETCEN trained Local Site Operator (LSO) for the local affiliated AURN station. This is to ensure that both a high-level of accurate data and an acceptable percentage of data capture are obtained.

All automatic monitoring equipment has both routine remote calibration checks and routine (fortnightly) on-site checks. They also have maintenance visits, which follow documented procedures that stem from equipment manuals, manufacturer instructions and the UK Automatic Network Site Operators Manual.

Routine visits include:

- visual inspection of the station
- regular inlet-filter changes
- regular sampling head-cleaning and airflow
- a two-point calibration of the NO_2 analyser using a zero-air scrubber and a Nitric Oxide (NO) gas on-site.

- AIR LIQUIDE supplies the NO_x span gas with the concentration certificate. This gas is traceable to national standards.

All equipment fitted within each station's enclosure (e.g., sample meteorological sensors, pumps, air conditioning units, modem etc.) is subject to independent routine maintenance and support via a service contract with Horiba. This includes:

- 6-monthly minor service and equipment check visits by the manufacturer for Horiba's analysers and approved engineers covering all non-Horiba equipment following national protocols and traceable QA/QC procedures. Horiba is ISO 9001 accredited and carries out similar or identical support work for a number of AURN network stations across the UK.

- 6-monthly major service where a full multi-point calibration is carried out on the NO_2 analyser, using zero-air, NO and $NO_2$2 span gas (again traceable to national standards) meaning the analyser data slope and offset factors are reset. In addition to multi-point calibration the following checks are carried out:
  - linearity
  - noise
  - response time, leaks, and flow
  - converter efficiency
  - stability of the on-site gas calibration cylinder.

The local AURN station is also subject to external audit. Site Inter-calibration checks are carried out by National Environmental Technology Centre Network engineers prior to each of Horiba's major services.

Horiba also carries out non-routine site visits in response to equipment failure to the same standards. Contract arrangements ensure that visits are carried out within two to three days of the notification of call-out in order to minimise data loss.

All routine and non-routine site visits are fully documented, and detail all works carried out, including any adjustments, modifications and repairs completed.

Calibration check methods

The calibration procedure for NO_x for sites C2, C4, C6 and C7 is based on a 2 point zero / span calibration check being performed at intervals of two weeks. The calibration procedure for the NO_x analyser of the C4 AURN network was based on three points, the third being span NO_2 to check the NO_2 Converter. However, this was changed to two-point calibration check. The methodology for the calibration procedure is followed according to the manufacturers' instruction handbooks:

- pre-calibration check - the site condition and status of the analyser is recorded prior to the zero / span check being conducted.
- zero check – the response of the analyser to the absence of the gas being monitored. The stations were fitted with an integrated scrubber system incorporating a set of scrubbers, Hopcalite, activated charcoal, Purafil and Drierite, to generate a dried gas with none of the monitored pollutants. All were changed at least every six months, but Hopcalite is changed more frequently due to the high levels of humidity in Portsmouth. These were changed to be fitted with synthetic air cylinders supplied by Air Liquide UK Ltd.
- span check – the response of the analyser to the presence of the gas of a known concentration. Traceable gases are used for calibration checks supplied as part of the maintenance contract.
- post calibration check - the site condition and status of the analyser upon completion of all checks.

- all Horiba's APNA-370 analysers have their own built in data storage facility. They are built in a multi-drop set up. The calibration checks are done directly through the front panel. Each analyser zero / span check is fully documented with records being kept centrally.

Automatic data handling

All the stations are remotely accessible from a desktop computer at the civic offices via a telemetry linkage by either landline or GSM system. The telemetry linkage software used is 'Data Communication Server'. It is set on a daily auto-dial collection mode for data retrieval. It is also set to run calibration checks every three days.

Once the connection is established, the 'Data Communication Server' software retrieves the overnight auto-calibration first and stores it in a temporary database and a calibration factor is generated according to the following steps:

- instrument span, F = C/(Vs-Vz) and
- pollutant concentration (ppb) = Fx(Va-Vz) where:
    - C is the set gas value on the gas certificate
    - Vs span value
    - Vz zero span value
    - Va is the sample value as recorded by the analyser.

Raw measured data retrieved from the station data logger(s) is then subject to the calculated correction factors and stored in the final database as corrected. The latter is then made readily available to be queried via the 'IDAZRW Central Station', database access software.

Instrument status and internal auto-calibration data can be viewed in addition to the corrected collected measured monitoring data.

The AQ data ratification is carried out manually from this station.

Manual data handling

All collected data is screened or validated by visual examination to see if there are any unusual measurements. The affected data is then flagged in the database. Any further remaining suspicious data, such as large spikes, 'flat-lines' and excessive negative data is flagged for more detailed investigation. 'IDAZRW Central Station' is capable to trace back any change made at all times with the administrator's name. An original raw dataset is always kept in the data processing software.

When data ratification has been completed the data is then made available for further statistical and critical examination for reporting purposes.

LAQ monitoring data can be imported manually into a Microsoft Excel spreadsheet. This scaled data (where values are above the lower detectable limit is considered to be valuable data) is then further converted to generate data in the NAQO format to enable direct comparison to the standards. A file of raw data is always kept for reference in the database.

PM_{10} and $PM_{2.5}$ Monitoring Adjustment

The type of PM_{10}/$PM_{2.5}$ monitor(s) utilised within Portsmouth City Council do not require the application of a correction factor.

Automatic Monitoring Annualisation

All automatic monitoring locations within Portsmouth City Council recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

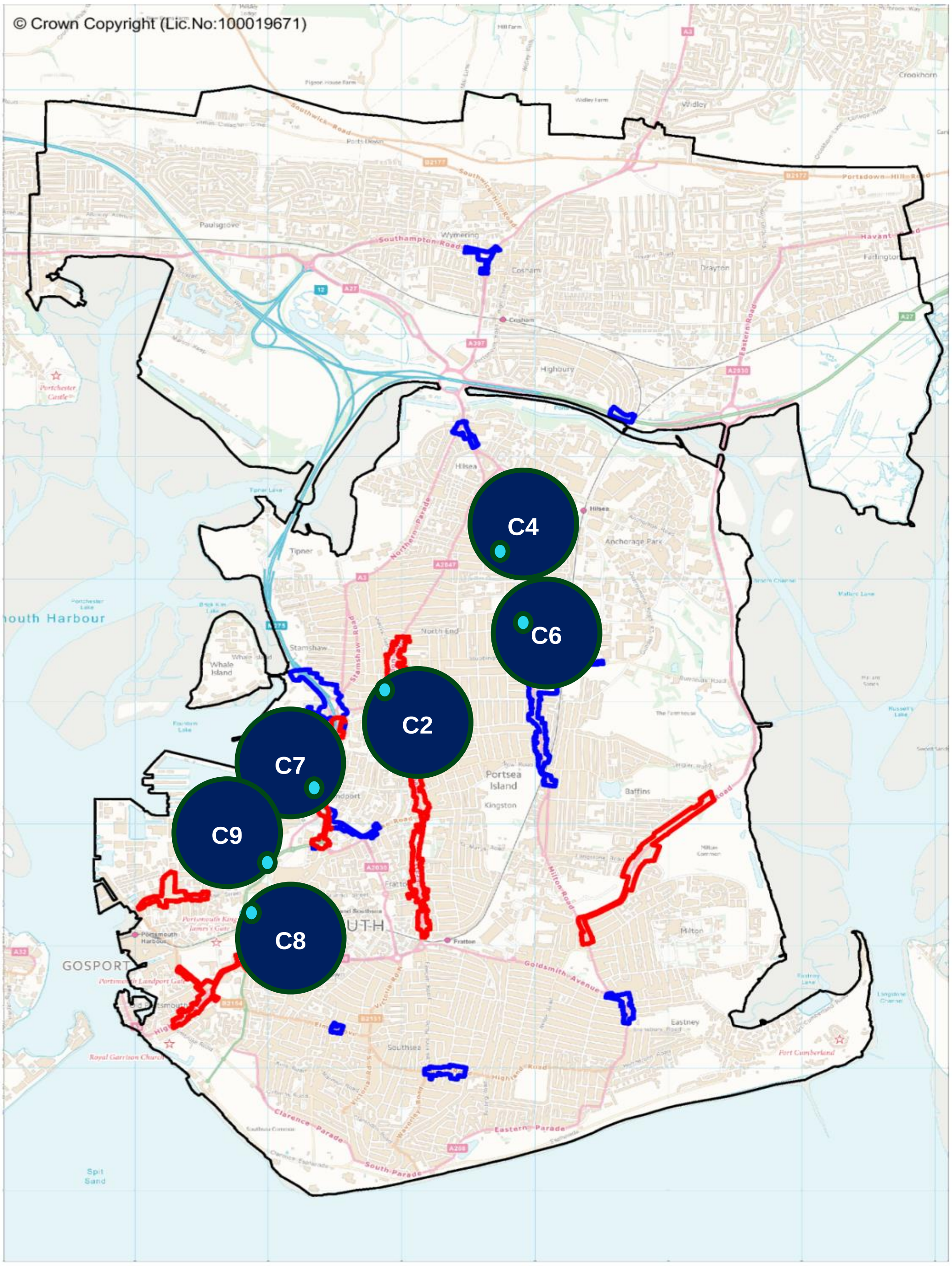
NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic Annual Mean NO_2 concentrations corrected for distance are presented in Table B.1.

No automatic NO_2 monitoring locations within Portsmouth City Council required distance correction during 2023.

Appendix D: Map(s) of Monitoring Locations and AQMAs

Map 1 – Locations of PCC's (C2, C4, C6, and C7) and Defra's (C8) CAQMS

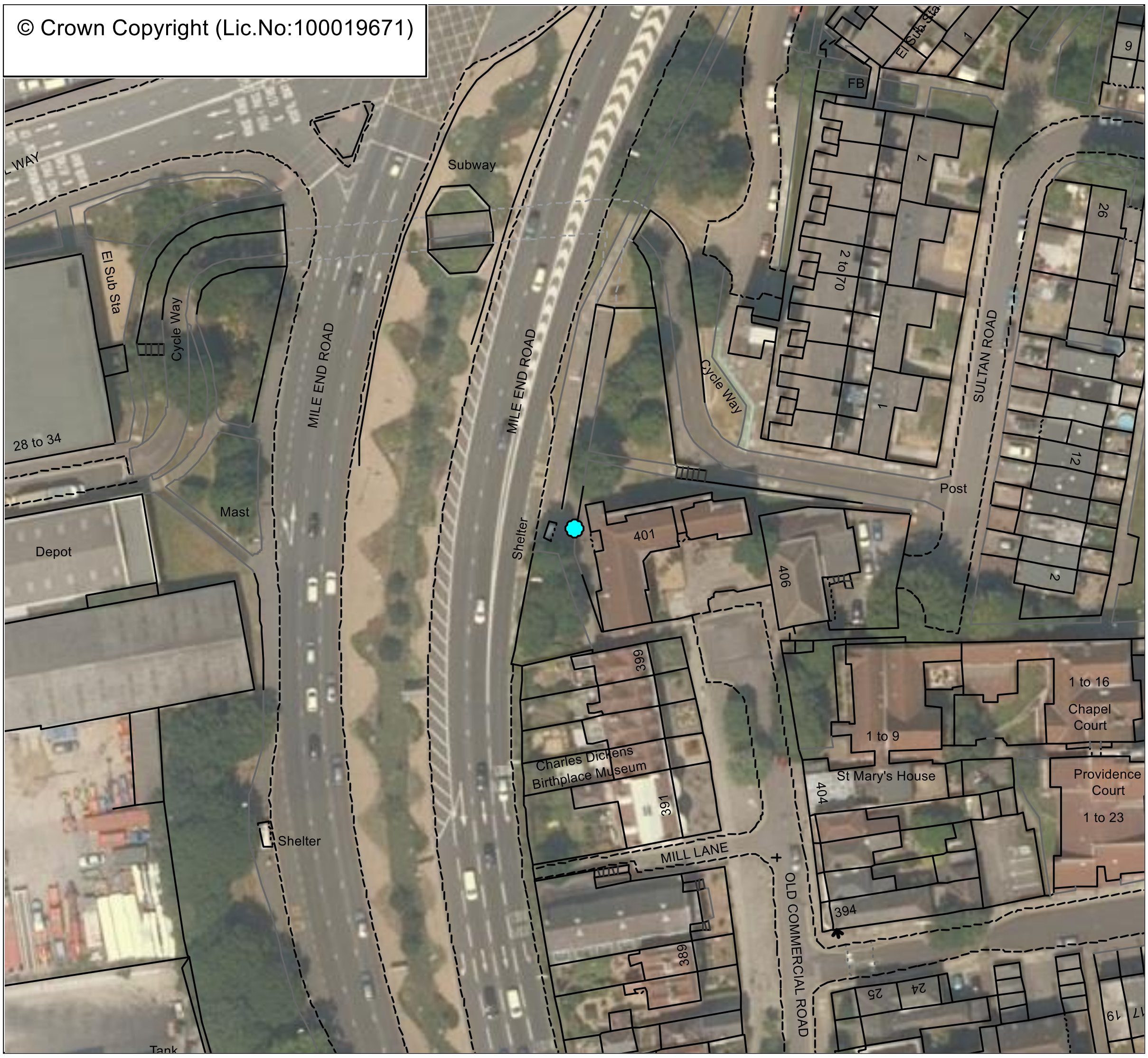


Map 2 – PCC's Kerbside CAQMS: Location (C2) London Road, North End

Map 3 – PCC's AURN CAQMS: Location (C4) Gatcombe Park Primary School, Hilsea

Map 4 – PCC's Roadside CAQMS: Location (C6) Burrfields Road, Baffins

Map 5 – PCC's Roadside CAQMS: Location (C7) Mile End Road, Buckland

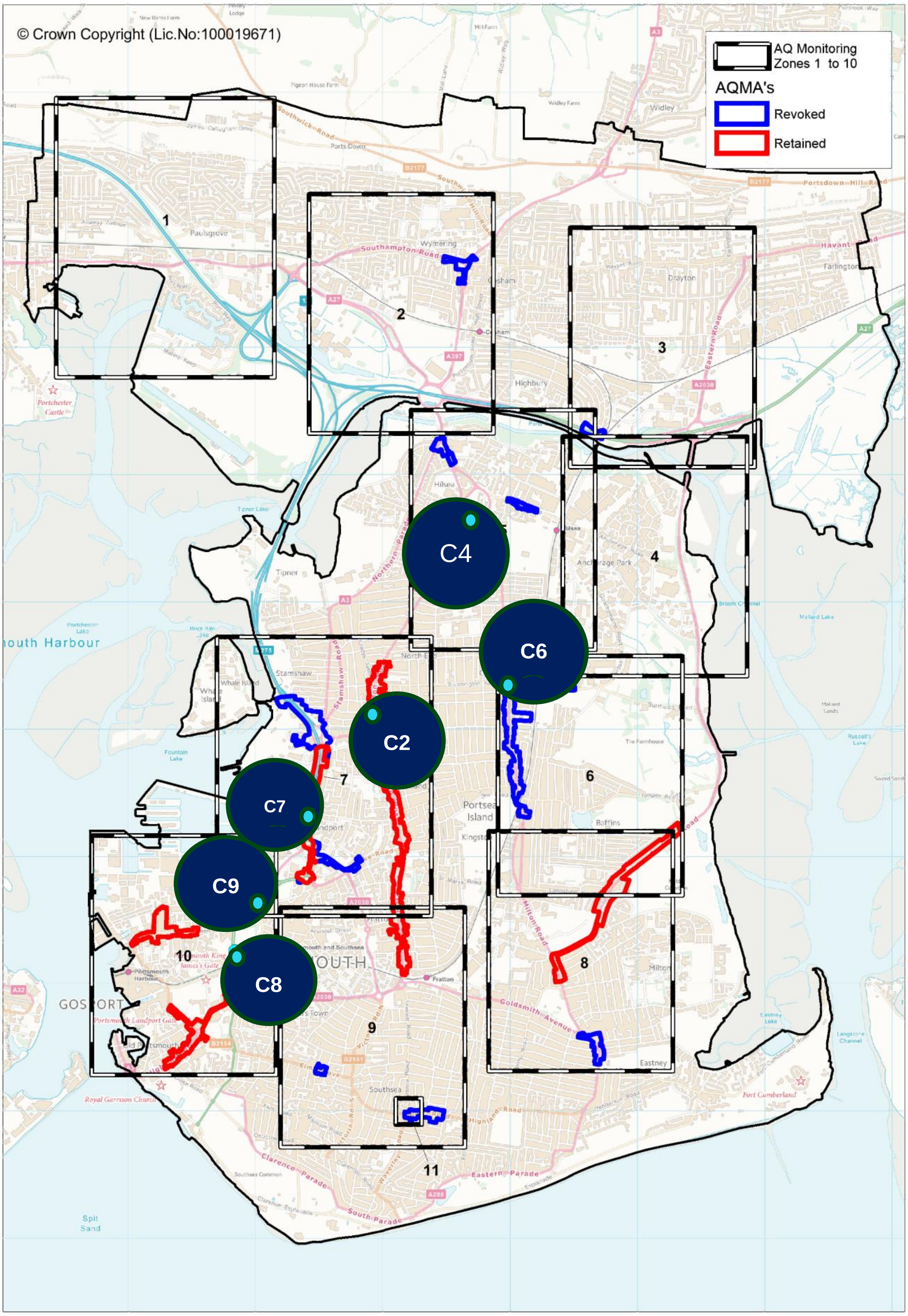


Map 6 – Defra's Roadside CAQMS: Location (C8) Anglesea Road, Southsea

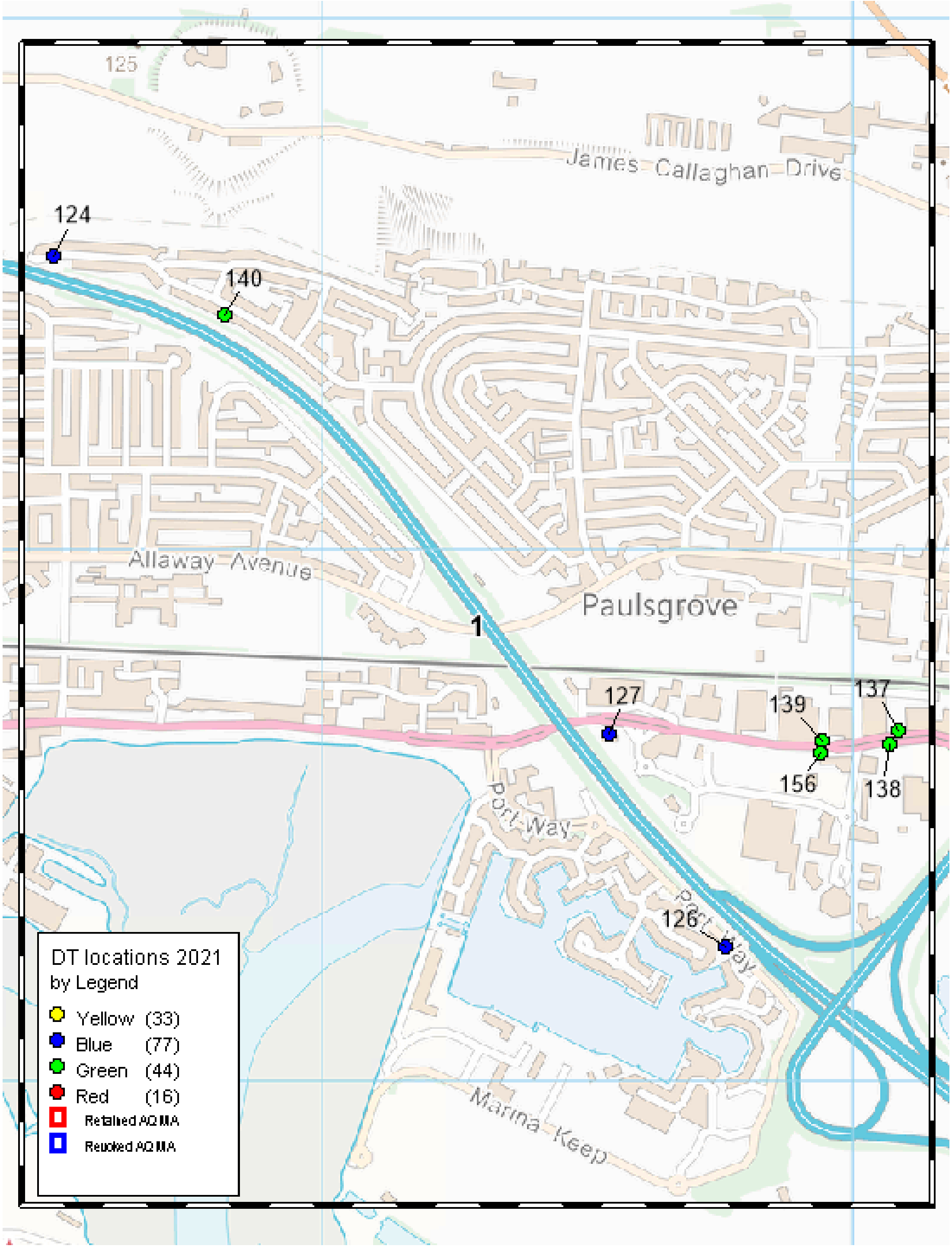
Map 7 – PCC's Roadside CAQMS: Location (C9), Alfred Road, Southsea

To be added

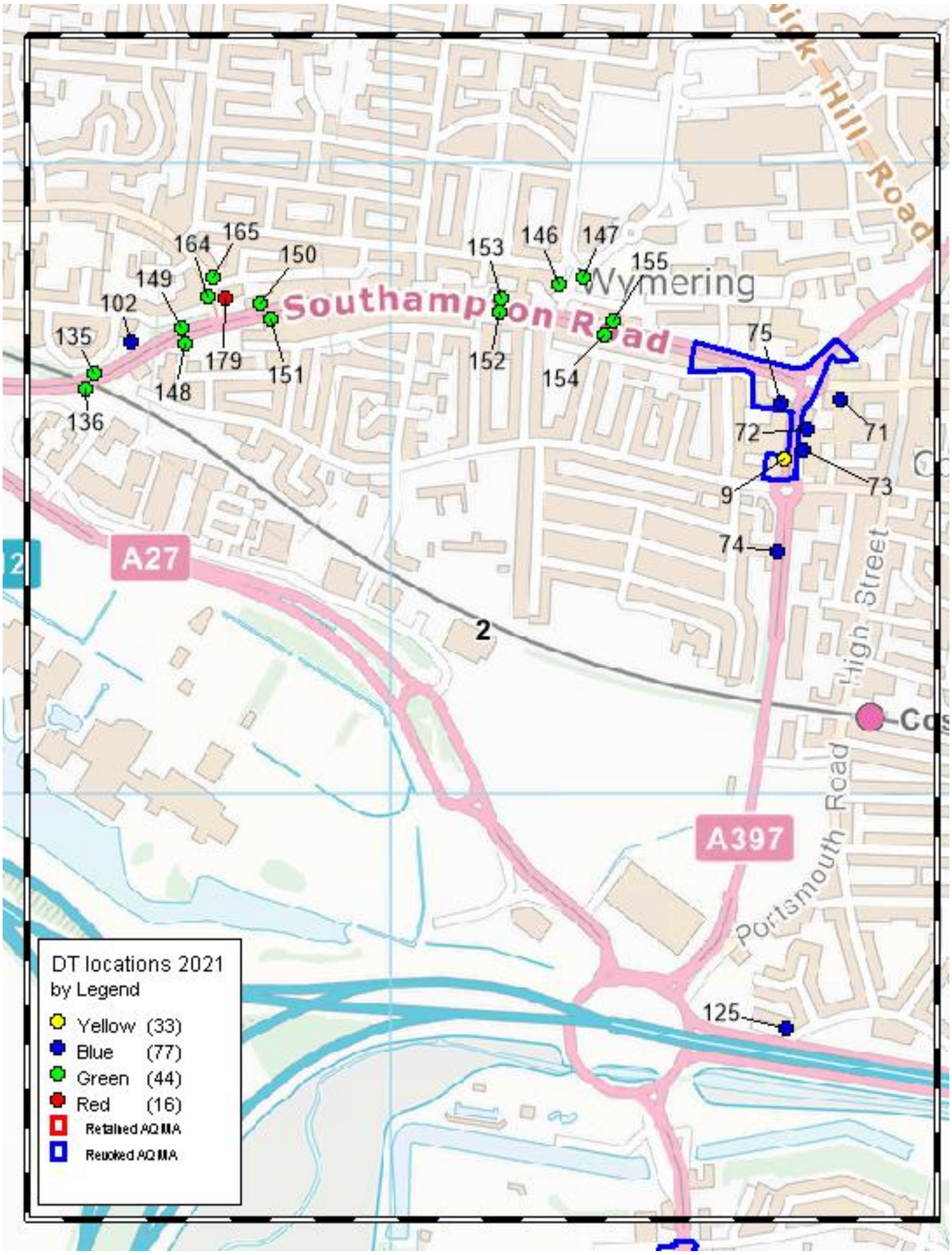
Map 8 – PCC's AQMAs and NDDT Monitoring Location Zones



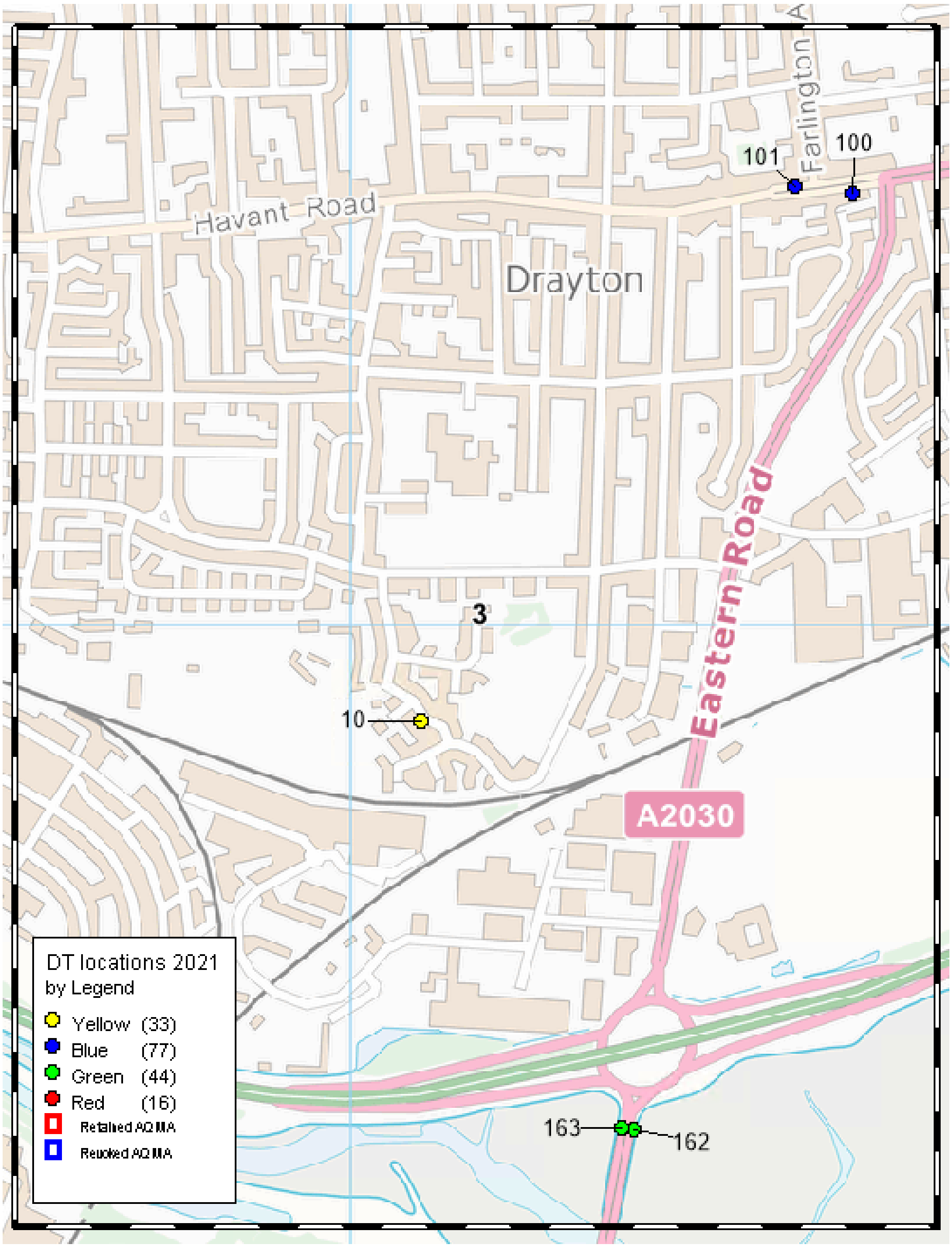
Map 9 – PCC's NDDT monitoring locations (Zone 1)



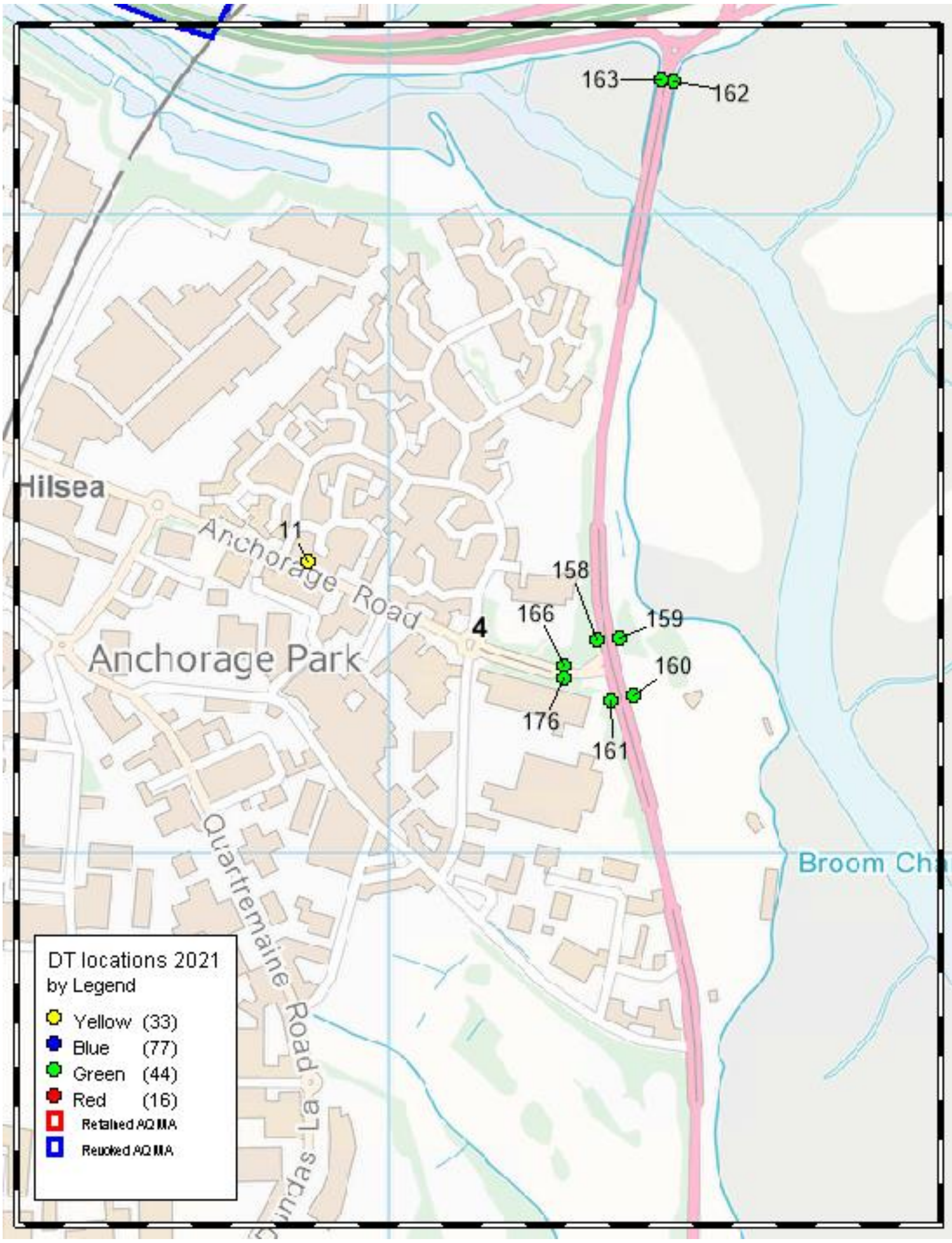
Map 10 – PCC's NDDT monitoring locations (Zone 2)



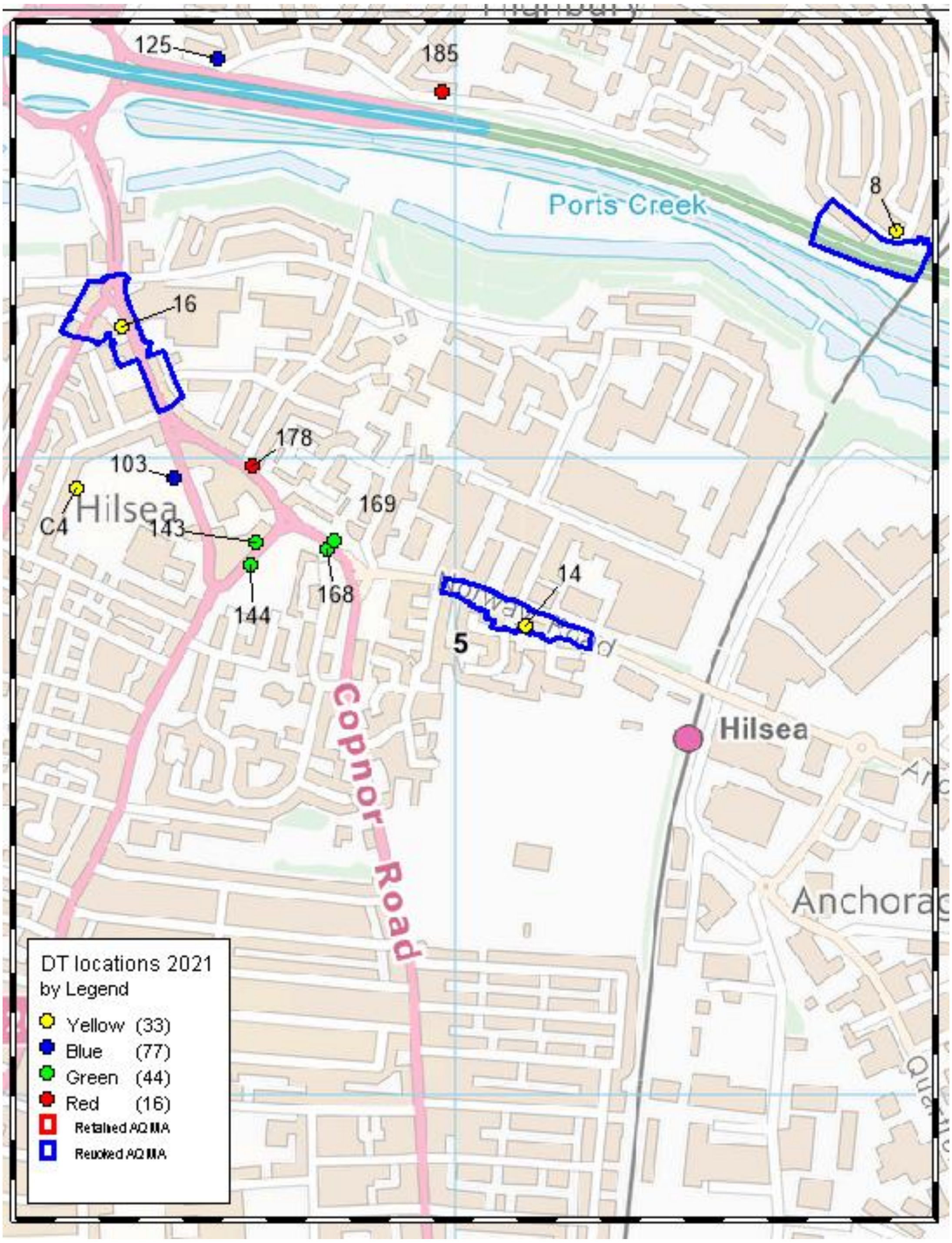
Map 11 – PCC's NDDT monitoring locations (Zone 3)



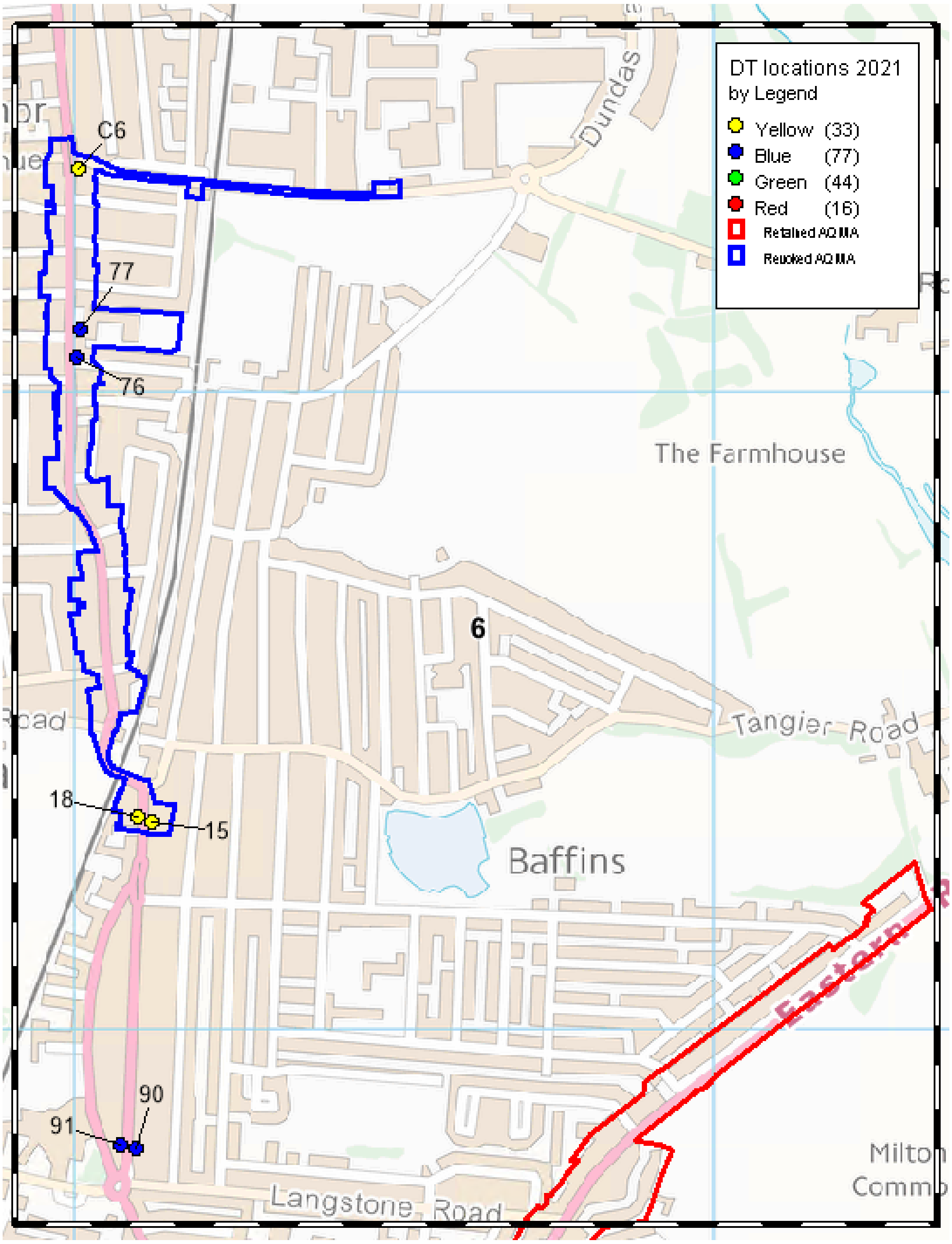
Map 12 – PCC's NDDT monitoring locations (Zone 4)



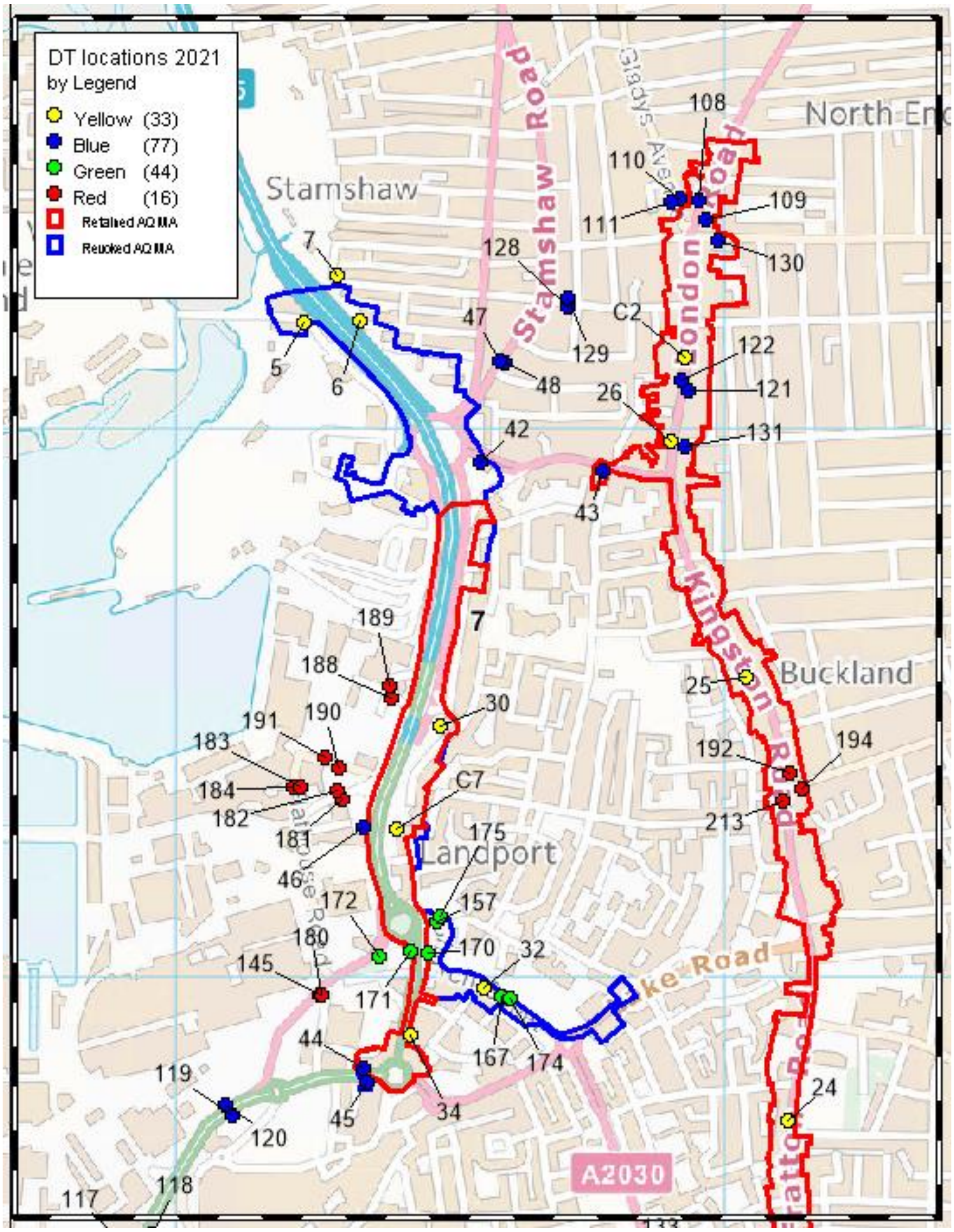
Map 13 – PCC's NDDT monitoring locations (Zone 5)



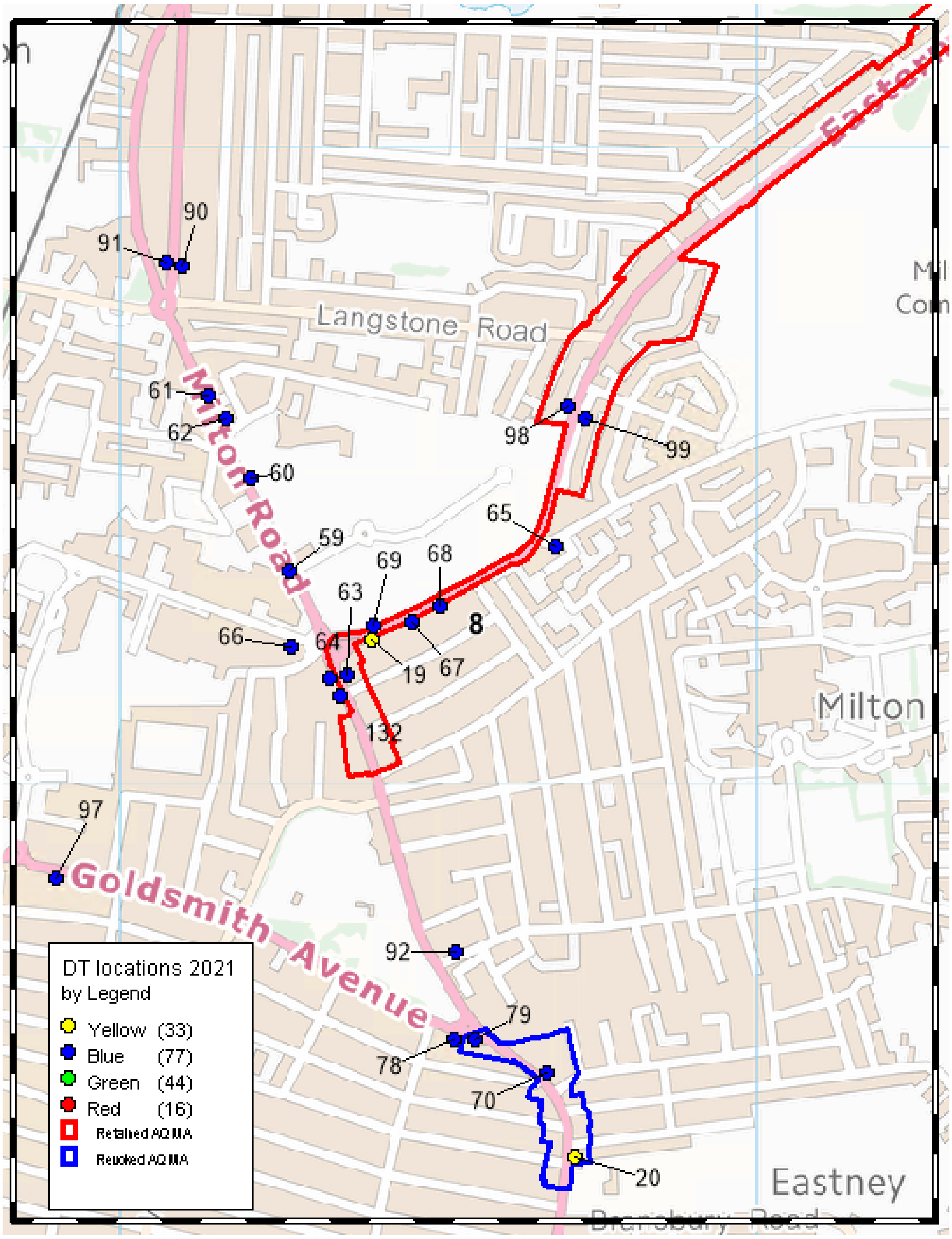
Map 14 – PCC's NDDT monitoring locations (Zone 6)



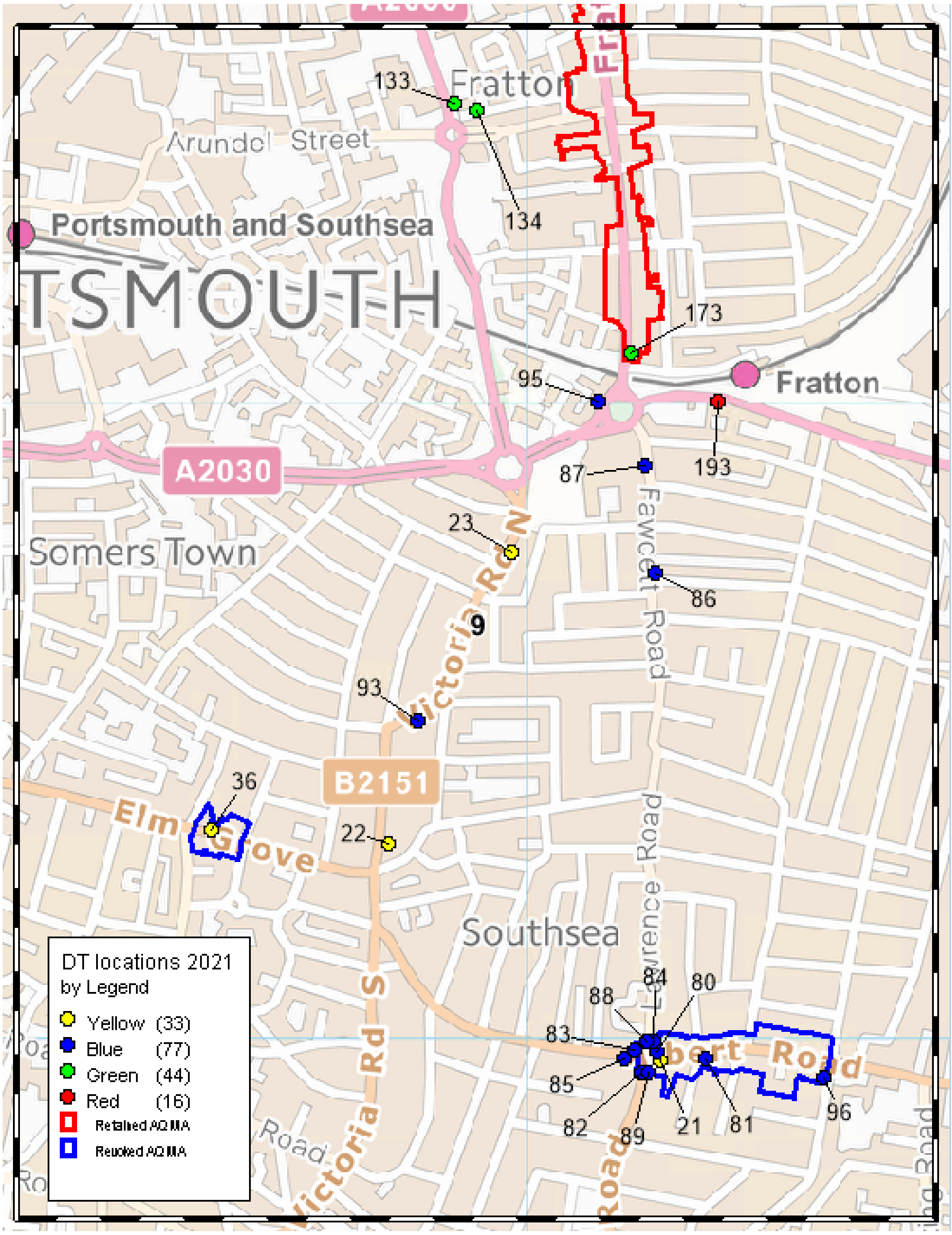
Map 15 – PCC's NDDT monitoring locations (Zone 7)



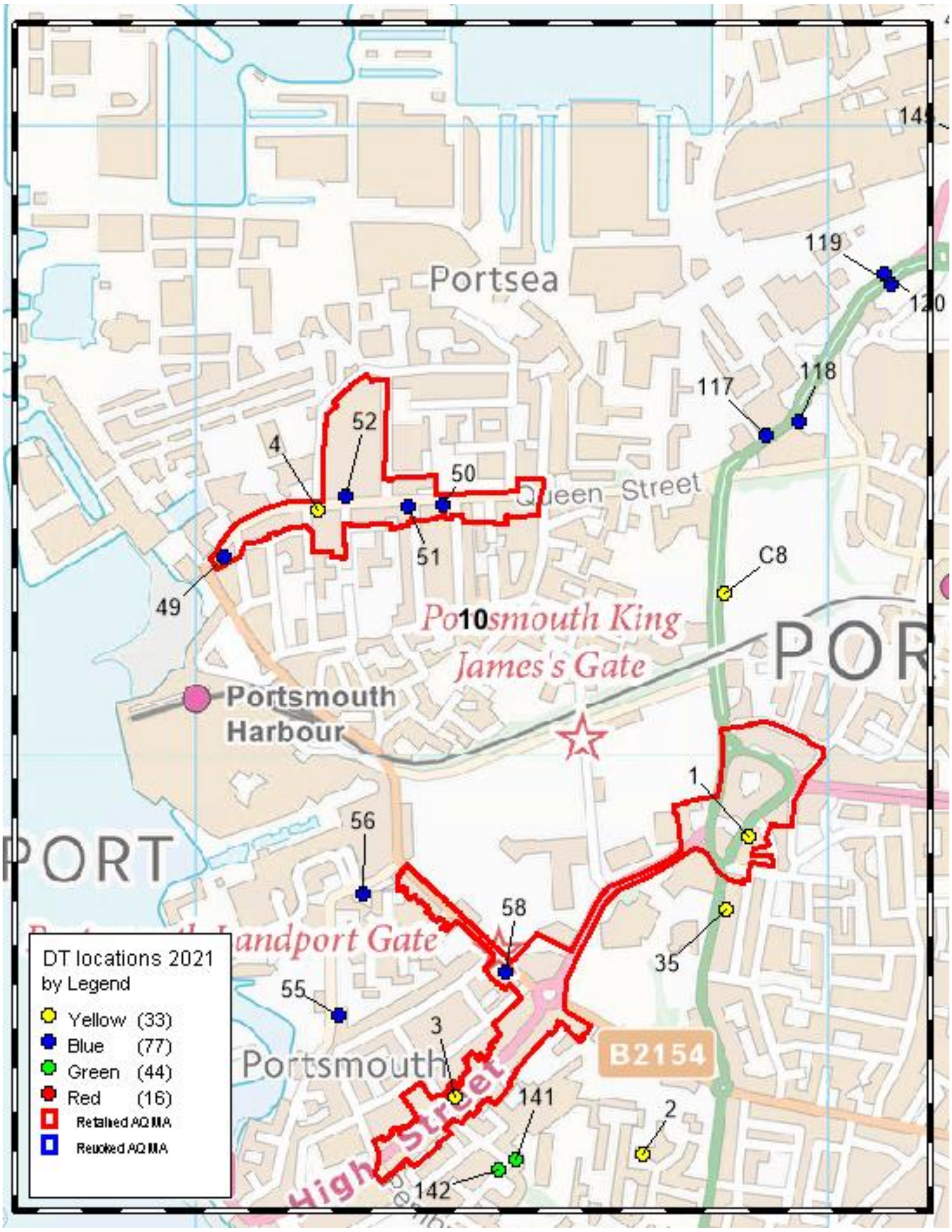
Map 16 – PCC's NDDT monitoring locations (Zone 8)



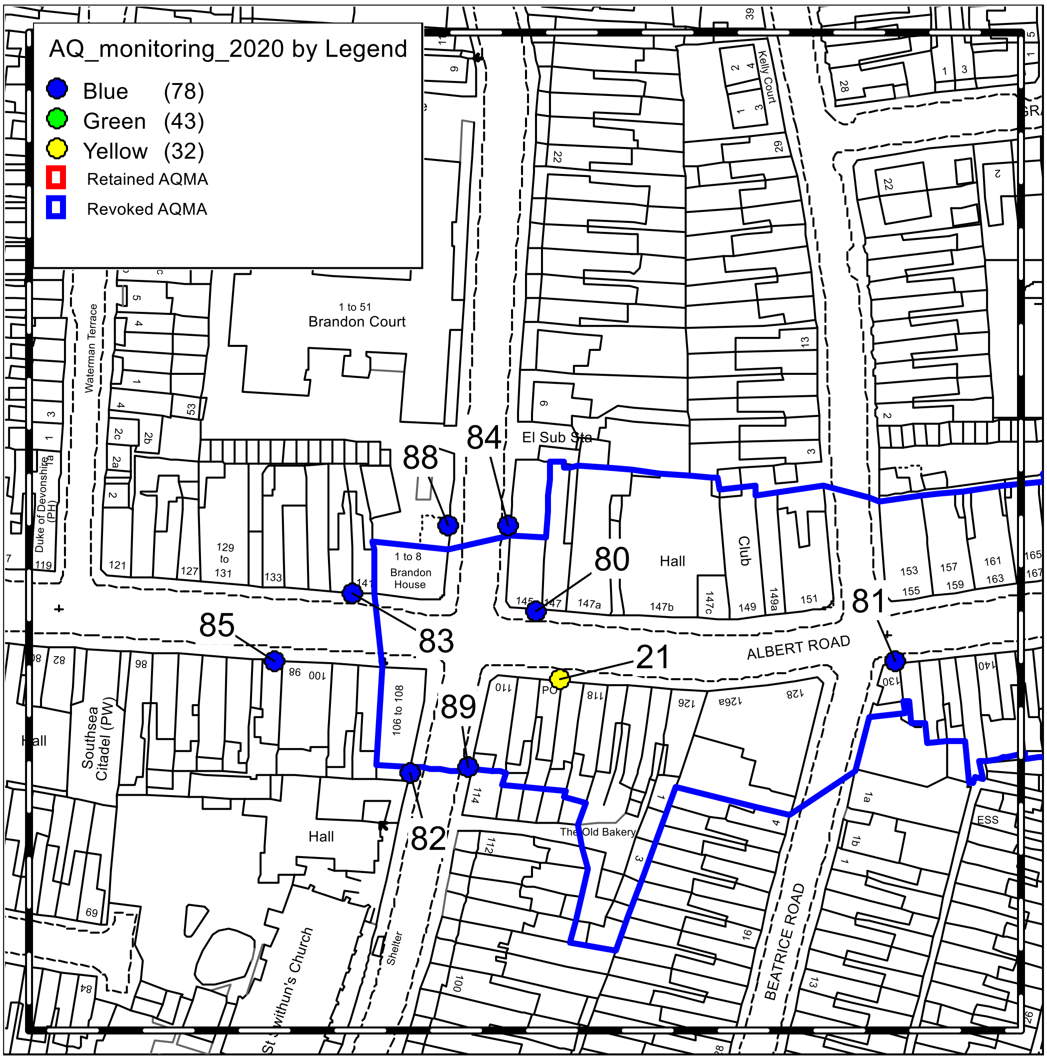
Map 17 – PCC's NDDT monitoring locations (Zone 9)



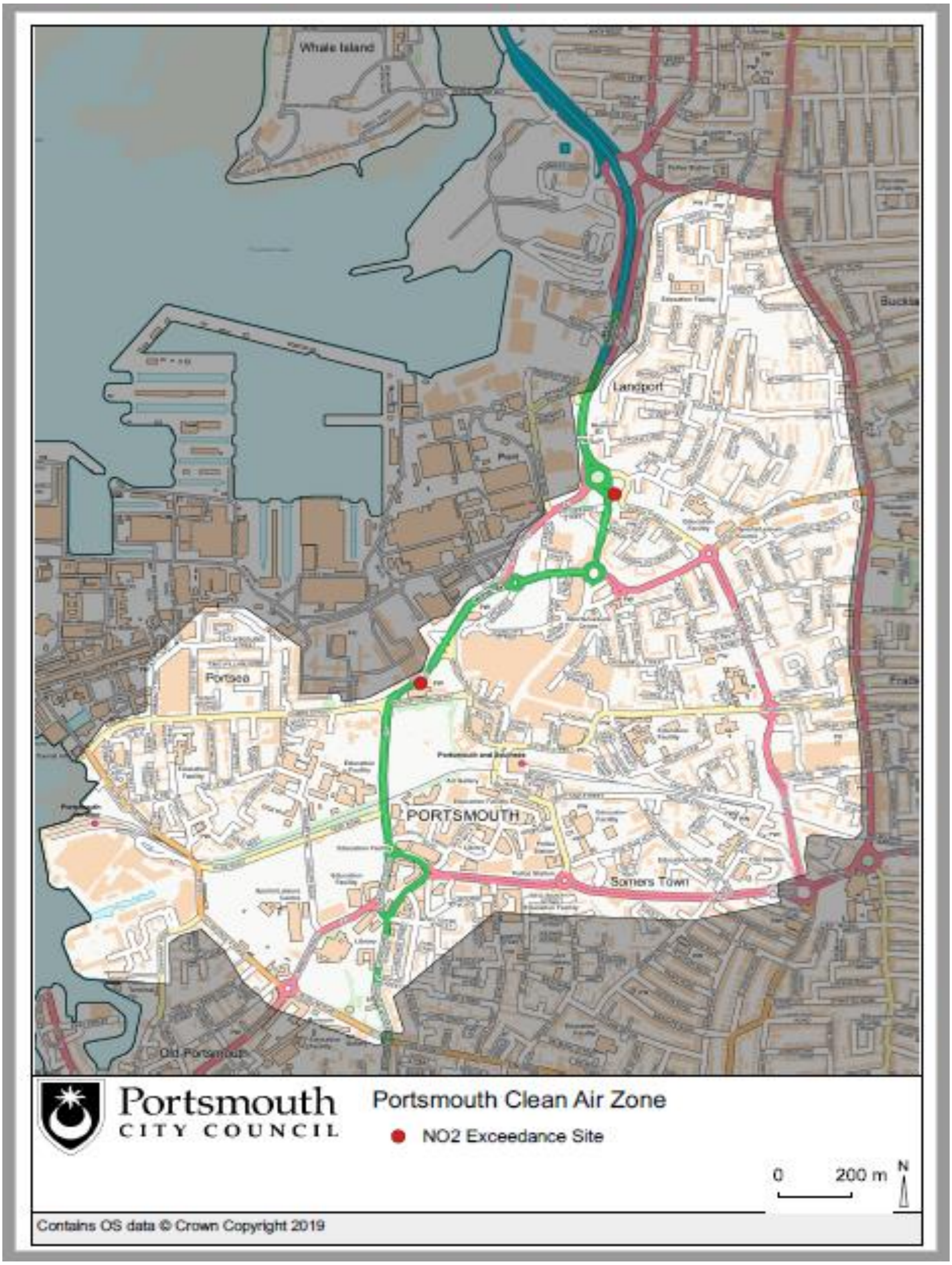
Map 18 – PCC's NDDT monitoring locations (Zone 10)



Map 19 – PCC's NDDT monitoring locations (Zone 11)



Map 20 – PCC's NDDT monitoring locations (Zone 11)



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[10]

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO_2)	200µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
Nitrogen Dioxide (NO_2)	40µg/m^3	Annual Mean
Particulate Matter (PM_{10})	50µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
Particulate Matter (PM_{10})	40µg/m^3	Annual Mean
Sulphur Dioxide (SO_2)	350µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO_2)	125µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO_2)	266µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

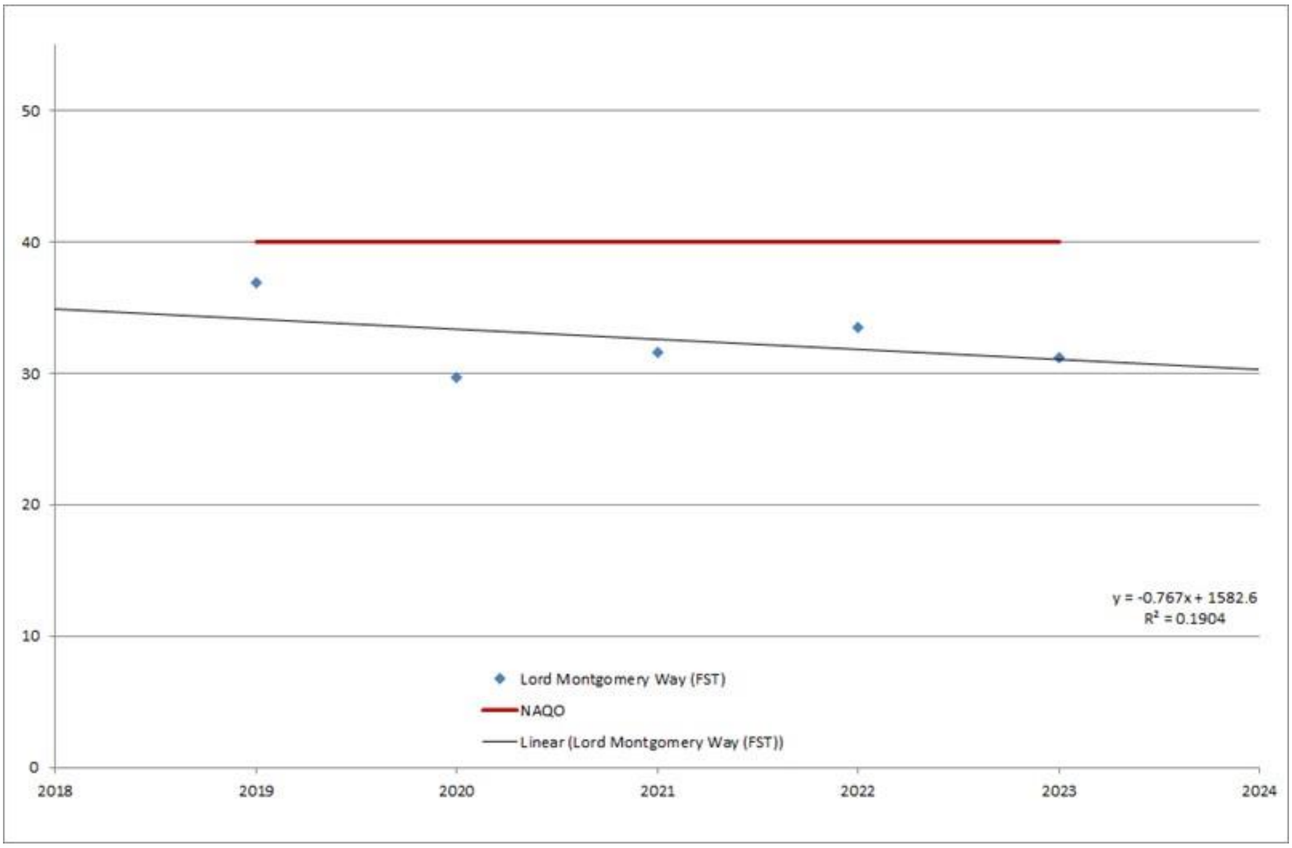
[10] The units are in microgrammes of pollutant per cubic metre of air (µg/m^3).

Appendix F: 5-year trends for nitrogen dioxide and particulate matter

NDDT Trends in Annual Mean NO_2 Concentrations

In this section the trends in Annual Mean NO_2 Annual Means are illustrated for All NDDT data (for monitoring period of three years and over) from **Figure F1 to F156**.

Figure F.1: Lord Montgomery Way (LMW-FST)



Summary

No exceedance/ short-term "beneficial"/ long-term "downward".

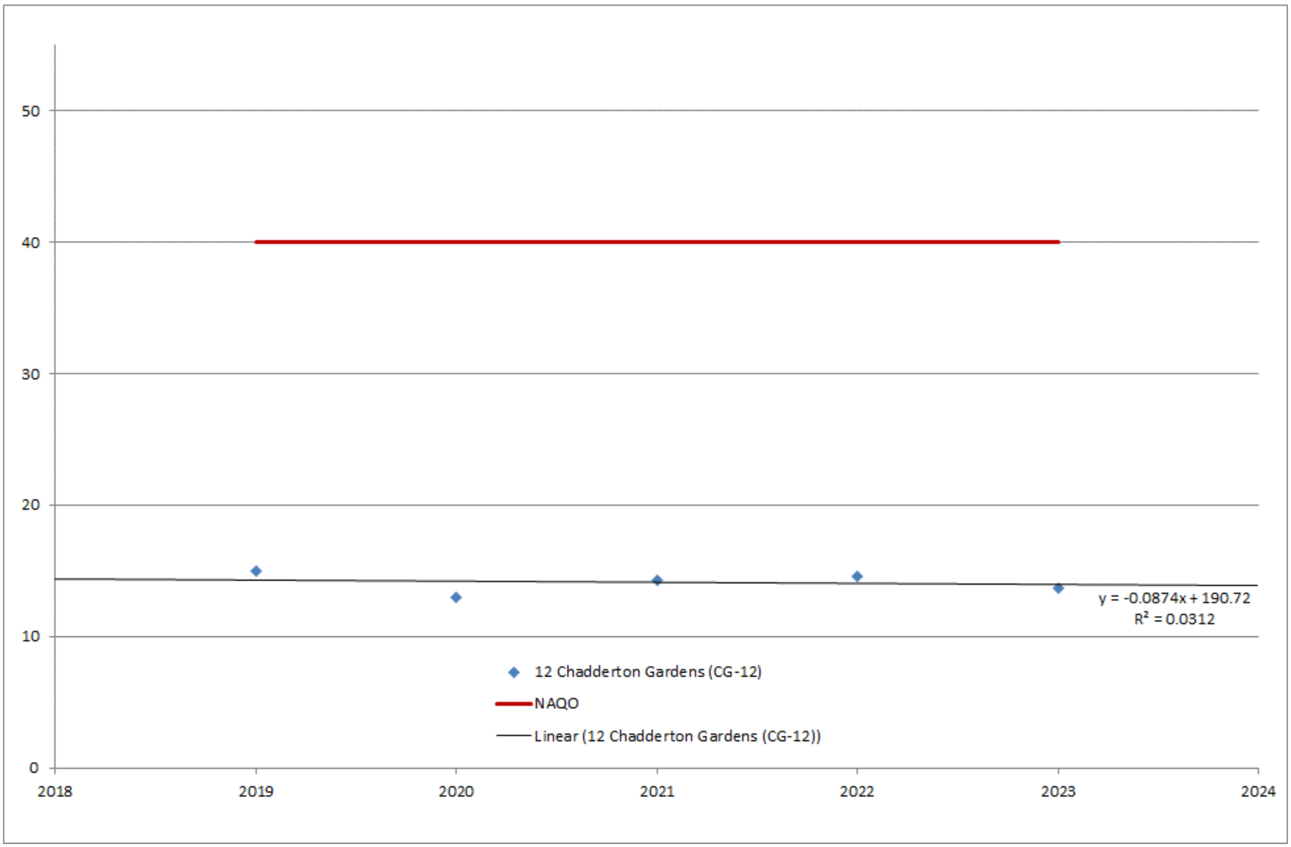
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 2.27µg/m^3 (a decrease of 6.79%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (31.19µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 77.97%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

    c. In the long term, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement, that is consistent with the previously reported 5-year trend.

Figure F.2: 12 Chadderton Gardens (CG-12)



Summary

No exceedance/ short-term "beneficial"/ long-term "downward".

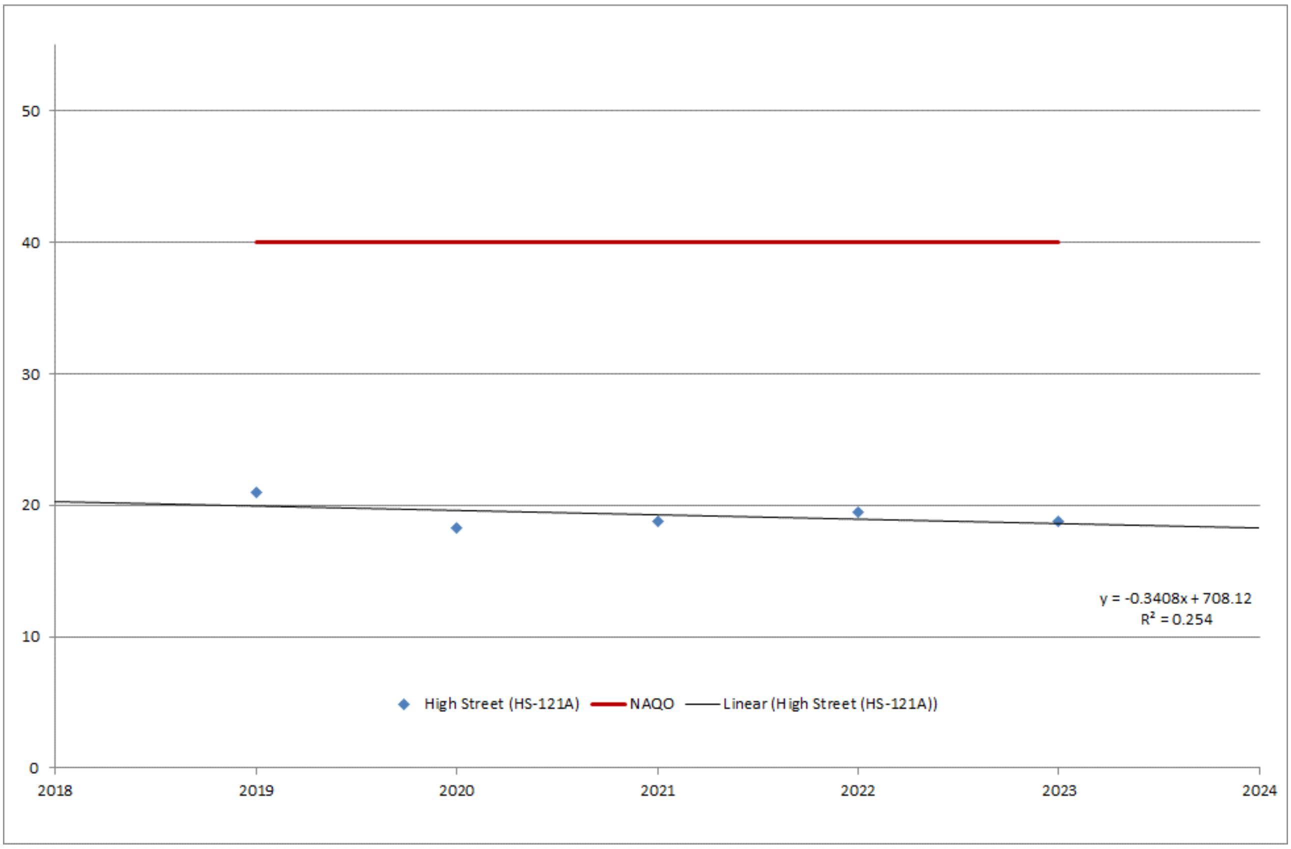
1. The NO_2 Annual Mean at this urban background monitoring location decreased by 0.84µg/m³ (a decrease of 5.76%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (13.72µg/m³):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 34.30%.

    b. In the short term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

    c. In the long-term, however, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with the previously reported 5-year trend.

Figure F.3: 121A High Street (HS-121A)



Summary

No exceedance, short-term "beneficial", long-term "downward".

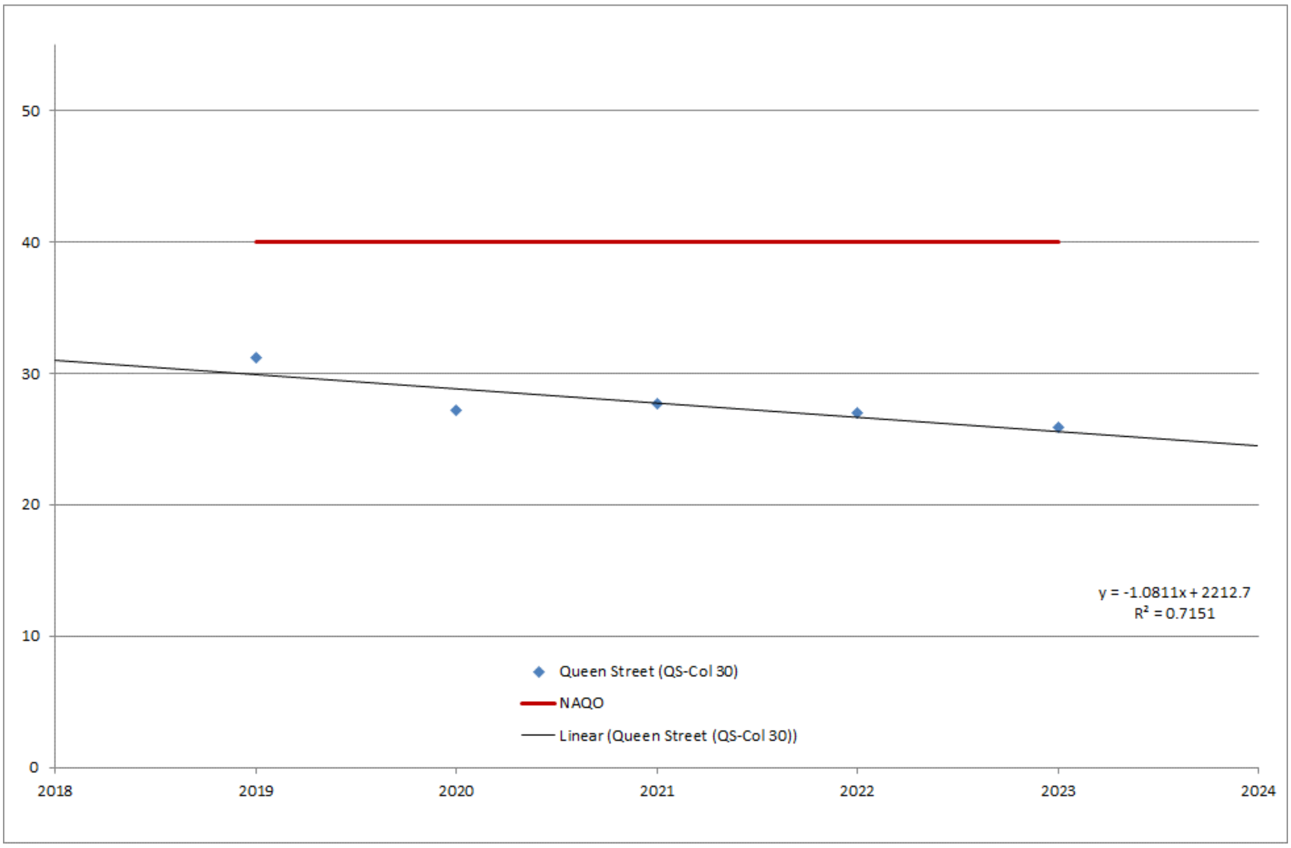
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 0.74µg/m^3 (a decrease of 3.74%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (18.73µg/m^3):

    a. The NO_2 Annual Mean concentration at the monitored location as % of the NO_2 Annual Mean NAQO was 46.83%.

    b. In the short-term, the 2012-2023 NO_2 Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

    c. In the long term, the NO_2 Annual Mean "downward" trend in the last 5 years exhibited a LAQ improvement that is consistent with the previously reported 5-year trend.

Figure F.4: Queen Street Column 30 (QS-Col30)



Summary

No exceedance, short-term "beneficial", long-term "downward".

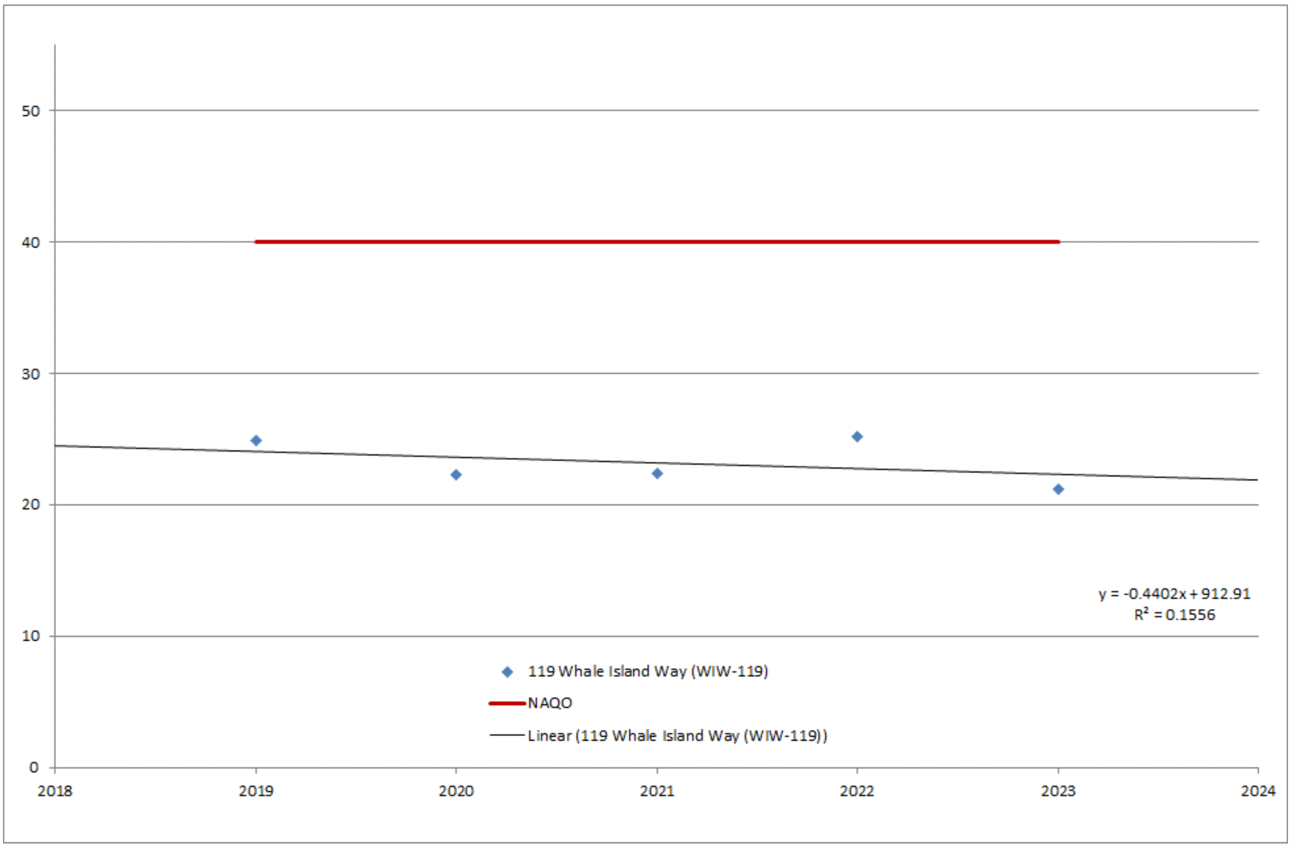
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 1.04µg/m^3 (a decrease of 3.87%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (25.90µg/m^3):

   a. The NO_2 Annual Mean concentration at the monitored location as % of the NO_2 Annual Mean NAQO was 64.74%.

   b. In the short-term the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

   c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with the previously reported 5-year trend.

Figure F.5: 119 Whale Island Way (WIW-119)



Summary

No exceedance, short-term "beneficial", long-term "downward".

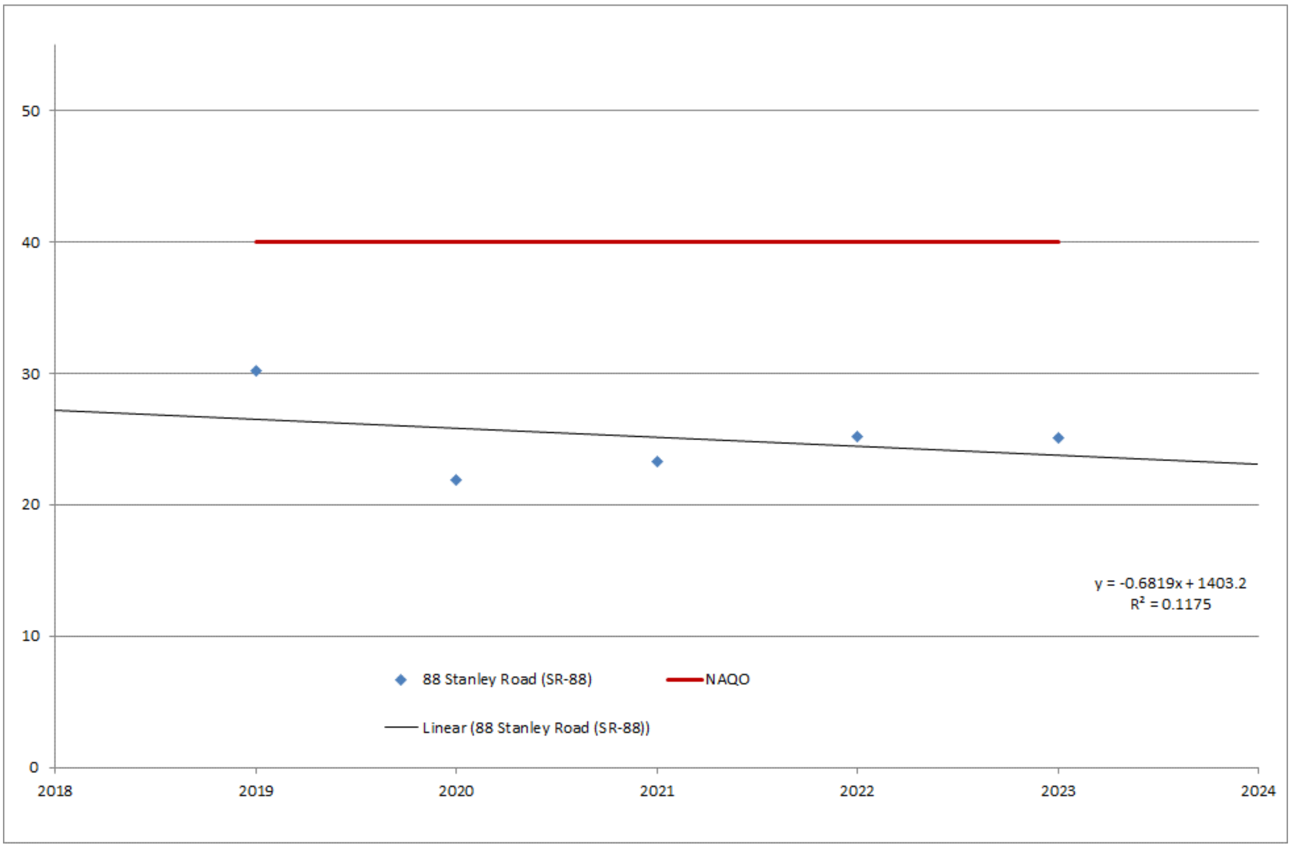
1. The NO_2 Annual Mean at this roadside monitoring location decrease by 4.03µg/m^3 (a decrease of 15.96%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (21.19µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 52.99%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

    c. In the long-term, however, the NO_2 Annual Mean "downward" trend in the last 5 years exhibited a LAQ improvement that is consistent with the previously reported 5-year trend.

Figure F.6: 88 Stanley Road (SR-88)



Summary

No exceedance, short-term "beneficial", long-term "downward".

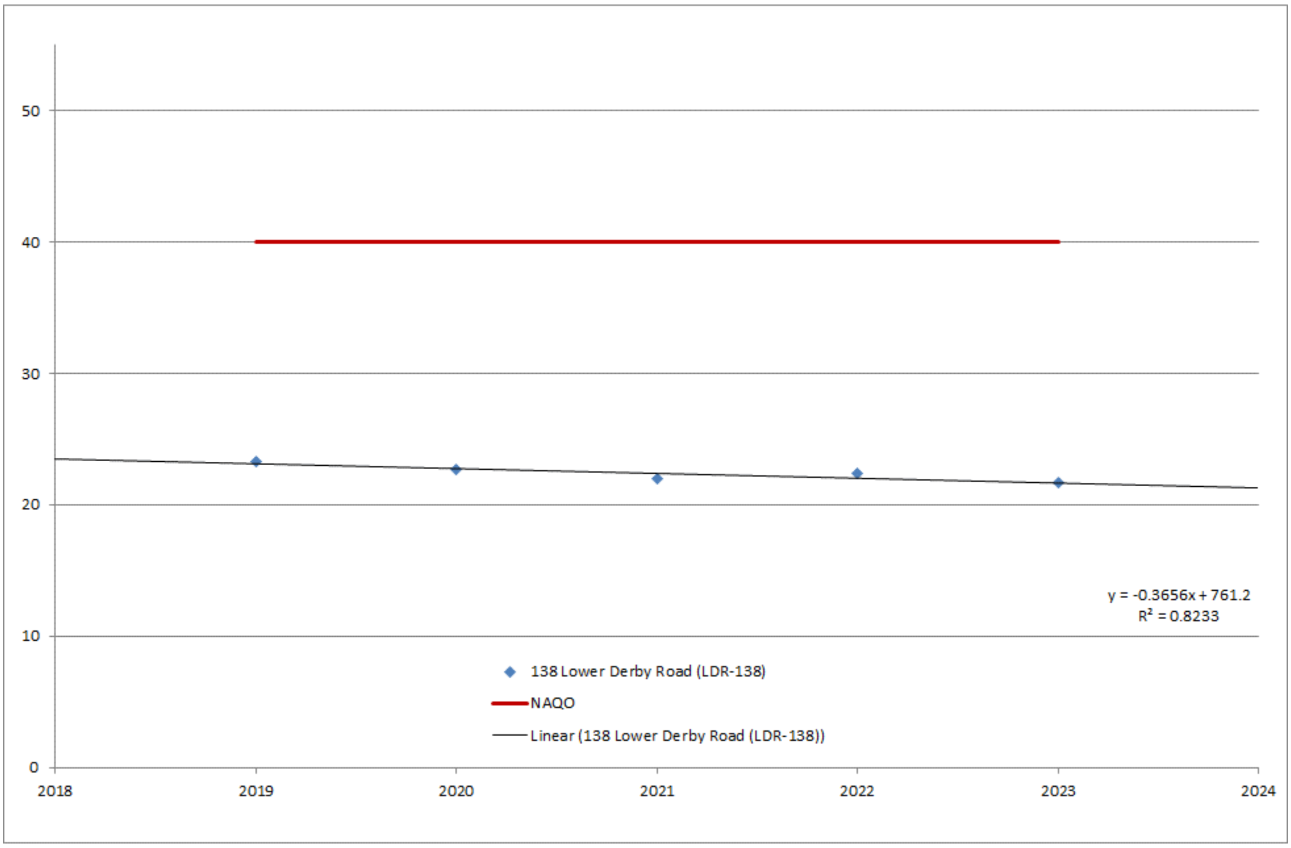
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 0.03µg/m^3 (a decrease of 0.12%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (25.12µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 62.80%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years exhibited a LAQ improvement that is consistent with the previously reported 5-year trend.

Figure F.7: 138 Lower Derby Road (LDR-138)



Summary

No exceedance, short-term " beneficial", long-term "downward".

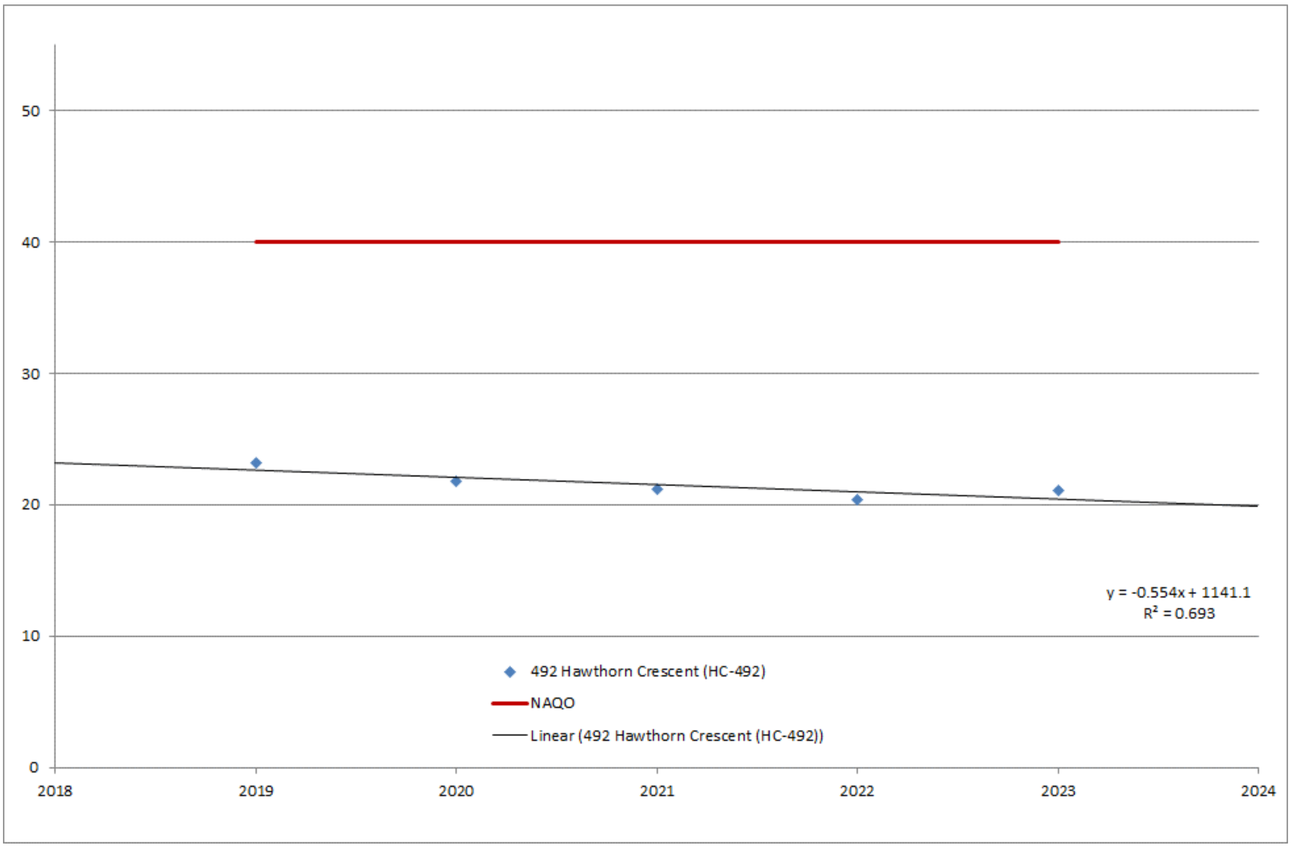
1. The NO_2 Annual Mean at this urban background monitoring location decreased by 0.70µg/m^3 (a decrease of 3.15%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (21.65µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 54.12%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with the previously reported 5-year trend.

Figure F.8: 492 Hawthorn Crescent (HC-492)



Summary

No exceedance, short-term "adverse", long-term "downward".

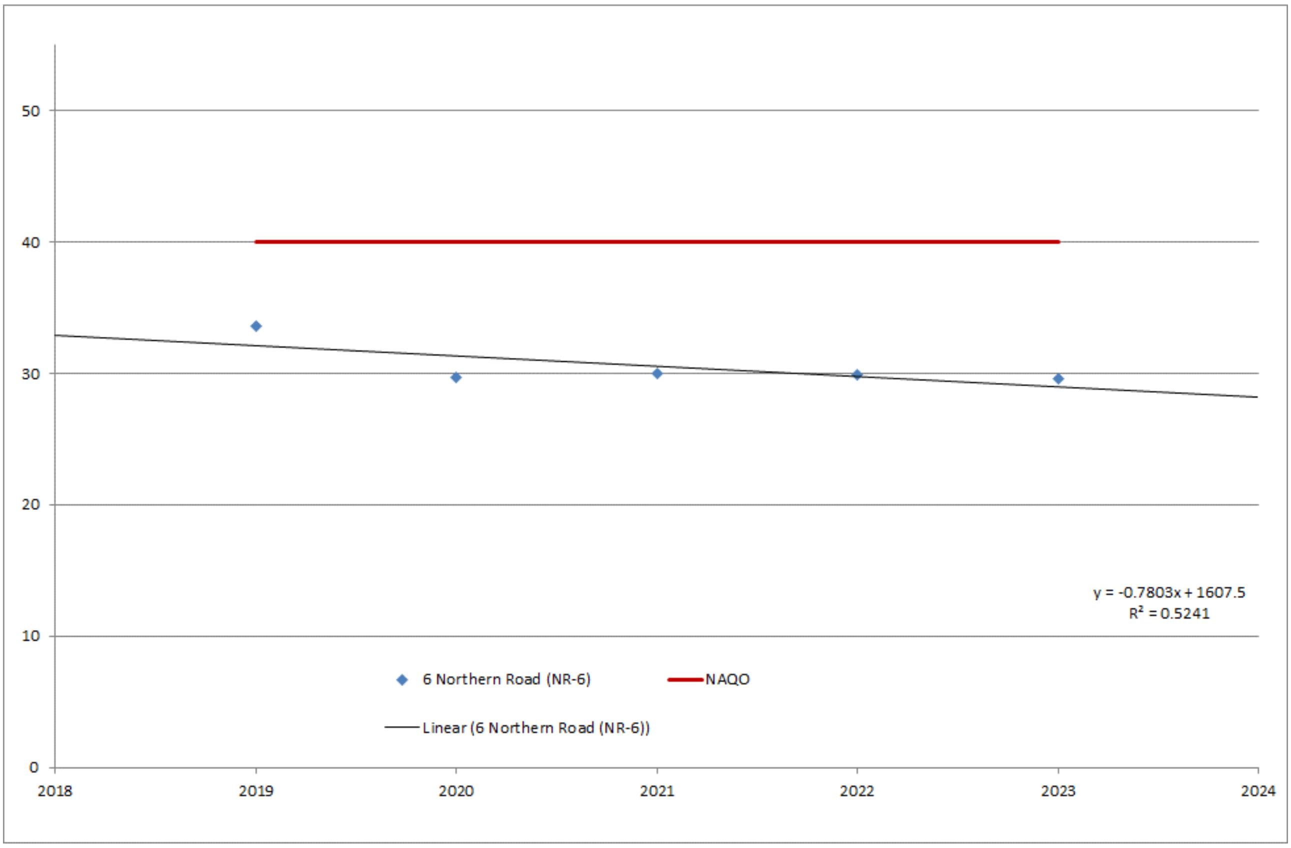
1. The NO_2 Annual Mean at this urban background monitoring location increased by 0.74µg/m^3 (an increase of 3.66%) between 2022 and 2023 but remained below the NO_2 Annual Mean NAQO in 2023 (21.10µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 52.76%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "adverse". Hence, LAQ deterioration.

    c. In the long-term, however, the NO_2 Annual Mean "downward" trend in the last 5 years exhibited a LAQ improvement that is consistent with the previously reported 5-year trend**.**

Figure F.9: 6 Northern Road (NR-6)



Summary

No exceedance, short-term "beneficial", long-term "downward".

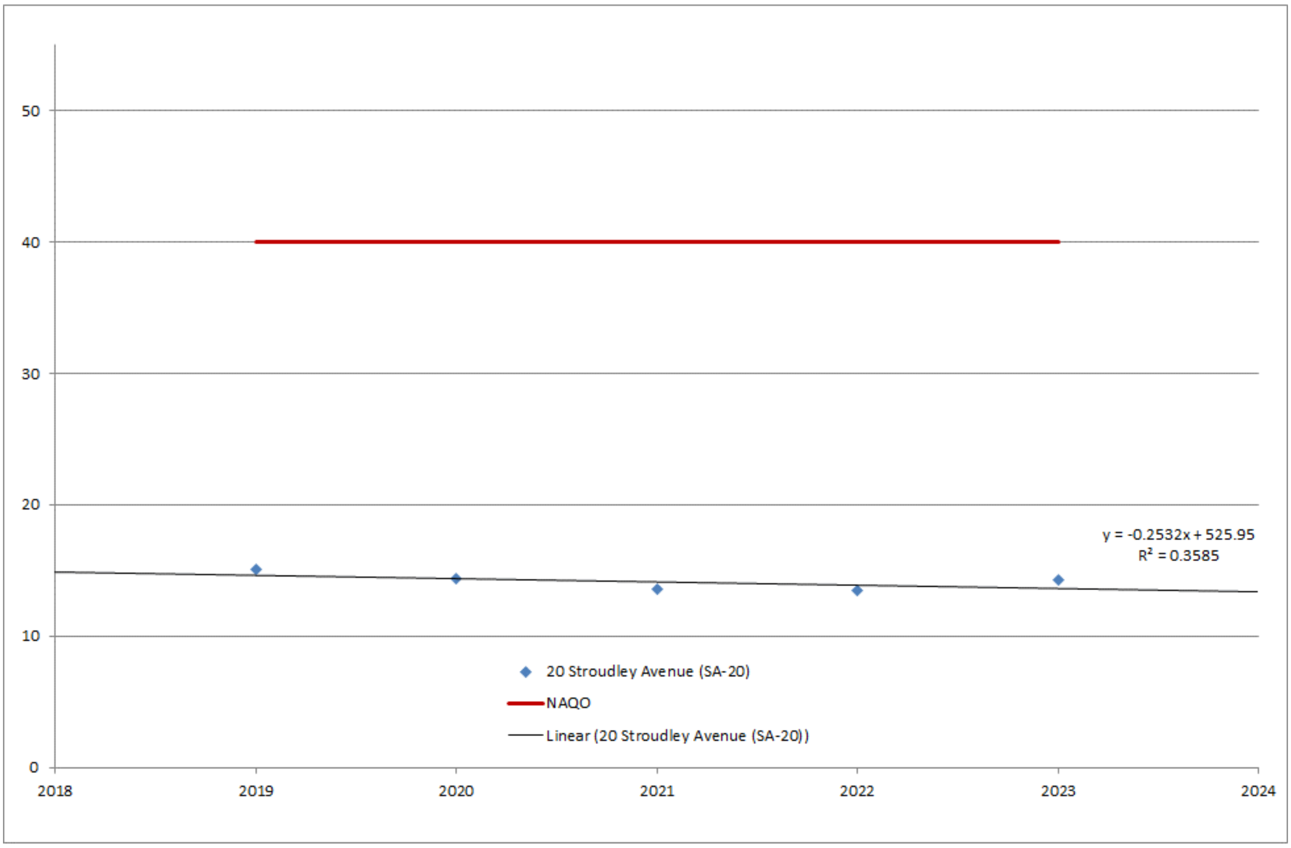
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 0.29µg/m^3 (a decrease of 0.97%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (29.61µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 74.03%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with the previously reported 5-year trend.

Figure F.10: 20 Stroudley Avenue (SA-20)



Summary

No exceedance, short-term "adverse", long-term "downward".

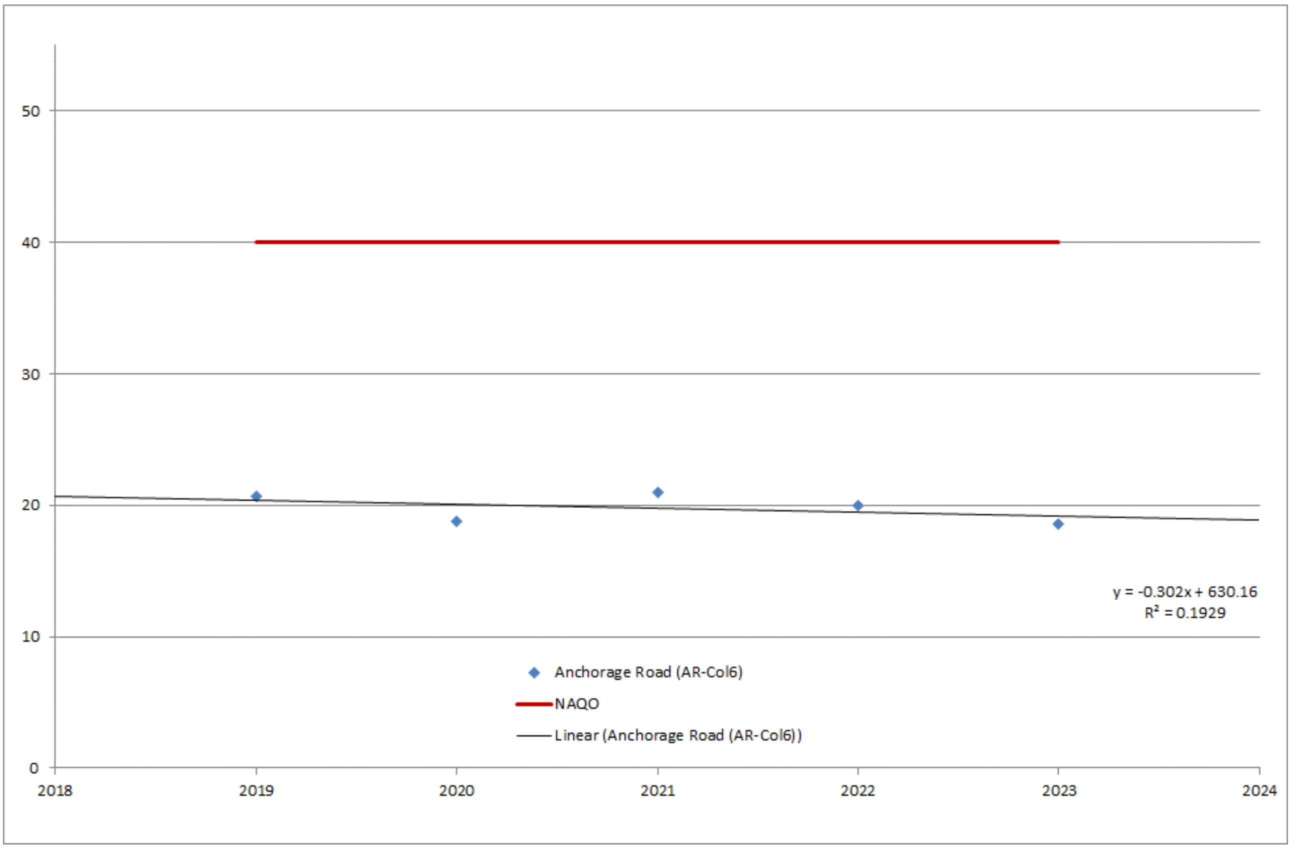
1. The NO_2 Annual Mean at this urban background monitoring location increased by 0.82µg/m^3 (an increase of 6.11%) between 2022 and 2023 but remained below the NAQO in 2023 (14.28µg/m^3):

   a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 35.71%.

   b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "adverse". Hence, LAQ deterioration.

   c. In the long-term, However, the NO_2 Annual Mean "downward" trend in the last 5 years exhibited a continued LAQ improvement that is consistent with the previously reported 5-year trend**.**

Figure F.11: Anchorage Road Column 6 (AR-Col6)



Summary

No exceedance, short-term "beneficial", long-term "downward".

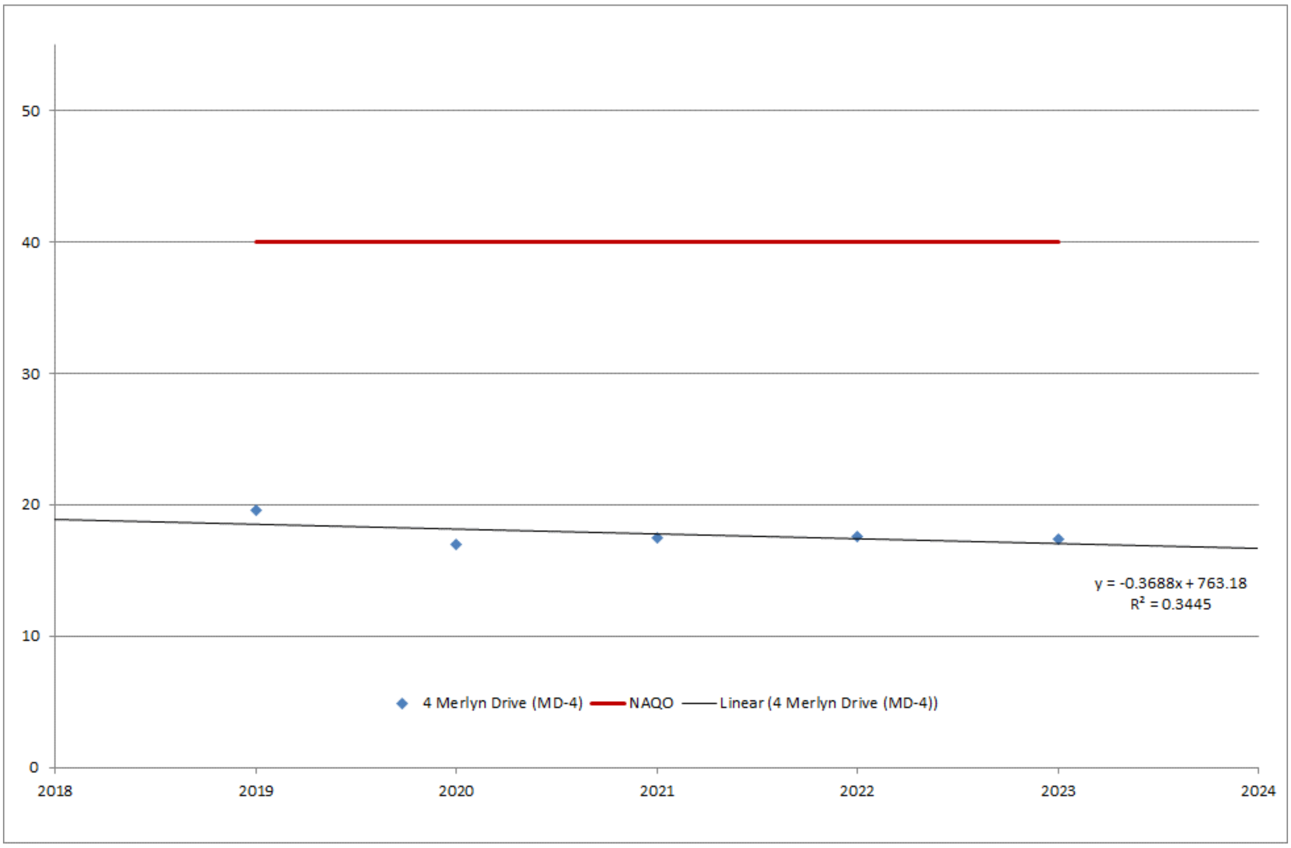
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 1.42µg/m^3 (a decrease of 7.08%) between 2022 and 2023 and remained below the NAQO in 2023 (18.59µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 46.46%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years exhibiting a LAQ improvement that is consistent with the previously reported 5-year trend that was downward.

Figure F.12: 4 Merlyn Drive (MD-4)



Summary

No exceedance, short-term "beneficial", long-term "downward".

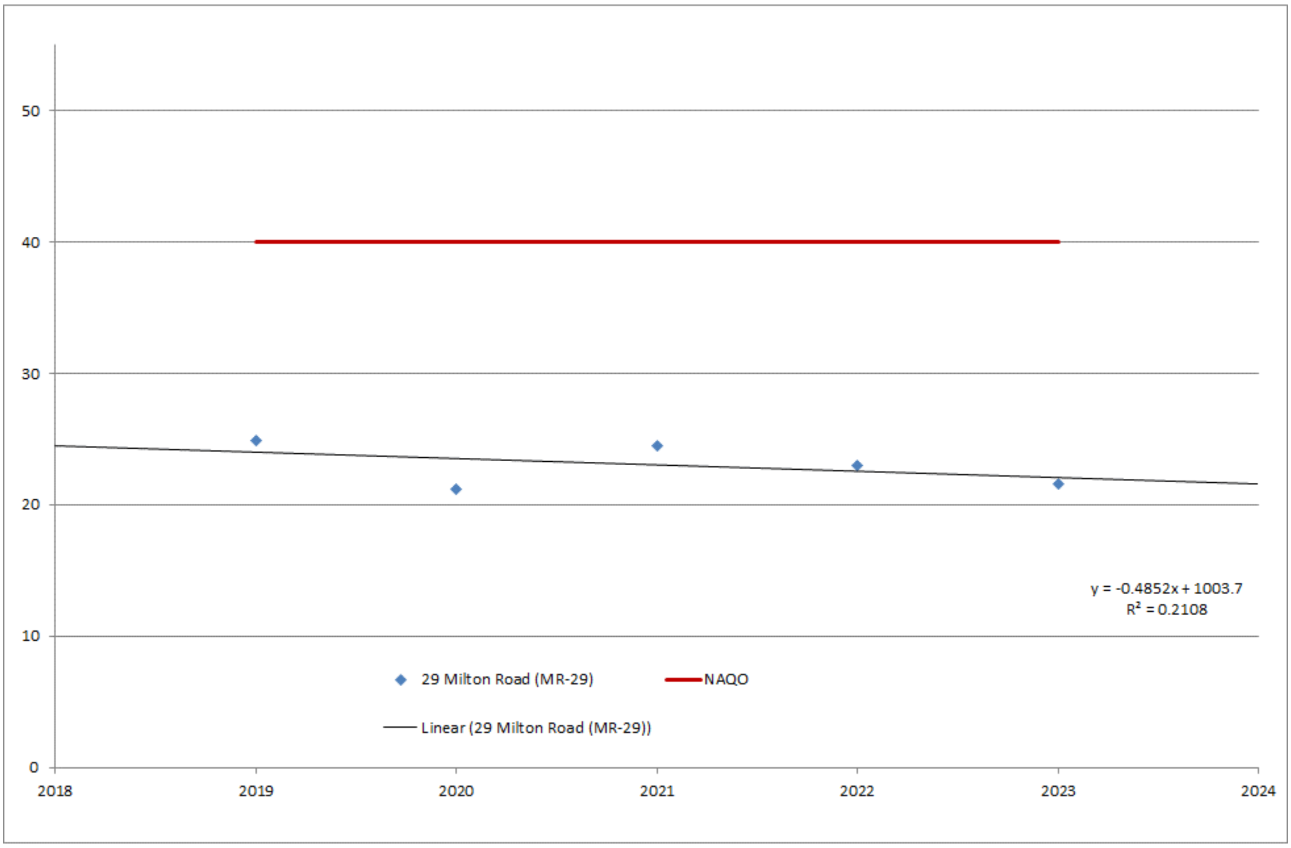
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 0.16 µg/m^3 (a decrease of 0.92%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (17.41µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 43.52%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years exhibited a LAQ improvement that is consistent with the previously reported 5-year trend.

Figure F.13: 29 Milton Road (MR-29)



Summary

No exceedance, short-term "beneficial", long-term "downward".

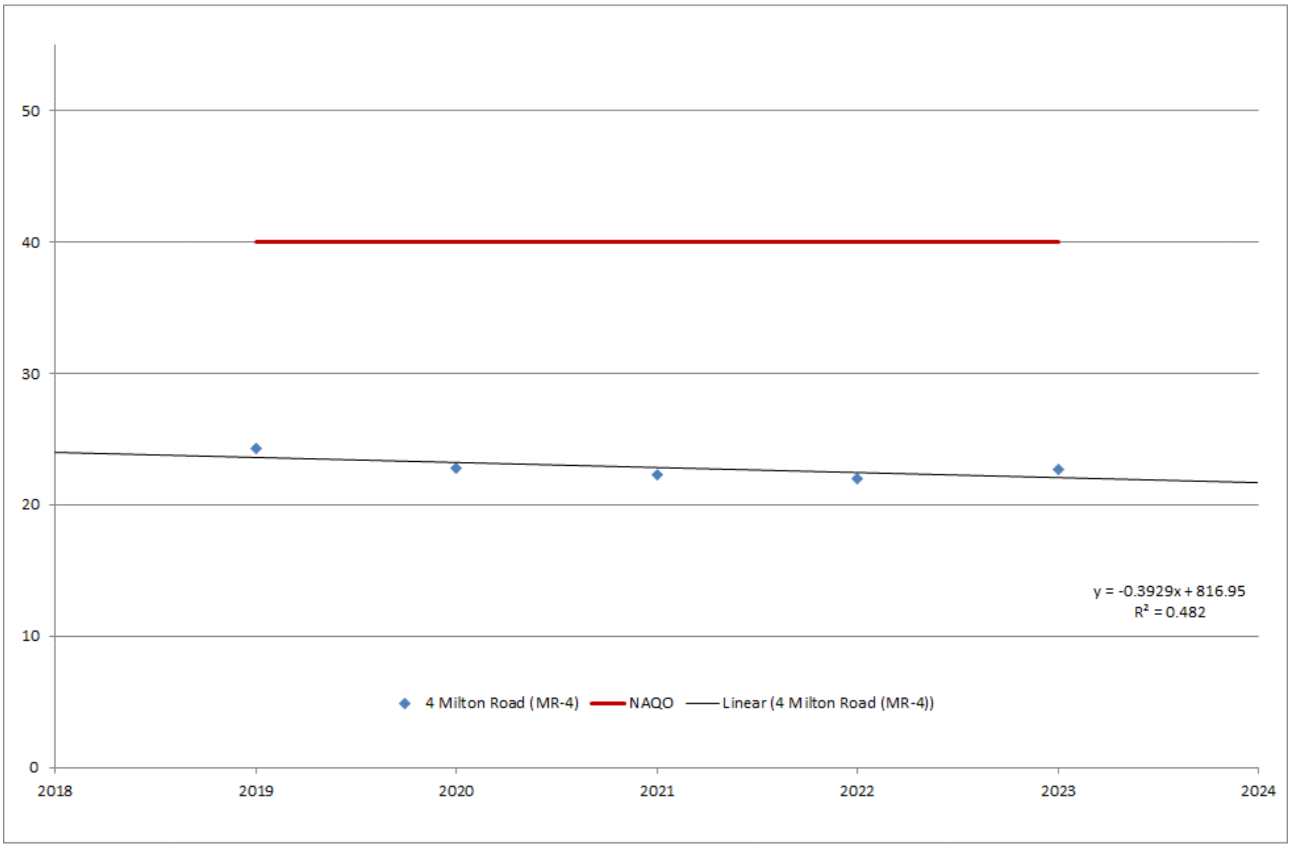
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 1.39µg/m^3 (a decrease of 6.06%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (21.58µg/m^3):

   a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 53.94%.

   b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

   c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years exhibited a LAQ improvement that is consistent with the previously reported 5-year trend.

Figure F.14: 4 Milton Road (MR-4)



Summary

No exceedance, short-term "adverse", long-term "downward".

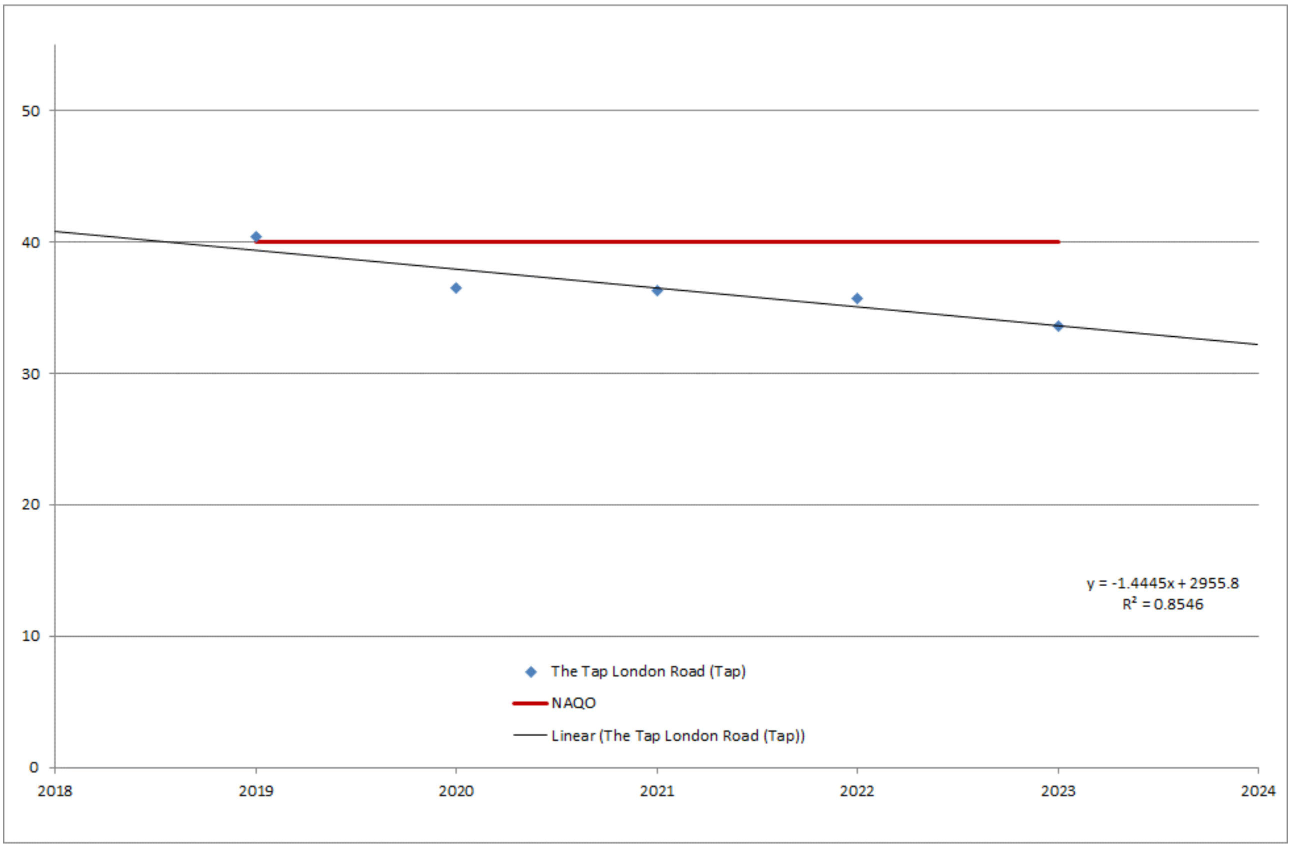
1. The NO_2 Annual Mean at this roadside monitoring location increased by 0.71µg/m^3 (an increase of 3.24%) between 2022 and 2021 but remained below the NO_2 Annual Mean NAQO in 2023 (22.73µg/m^3):

   a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 56.83%.

   b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "adverse". Hence, LAQ deterioration.

   c. In the long-term, however, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with the previously reported 5-year trend.

Figure F.15: The Tap Public House London Road (LR-TAP(PH))



Summary

No exceedance, short-term "beneficial", long-term "downward".

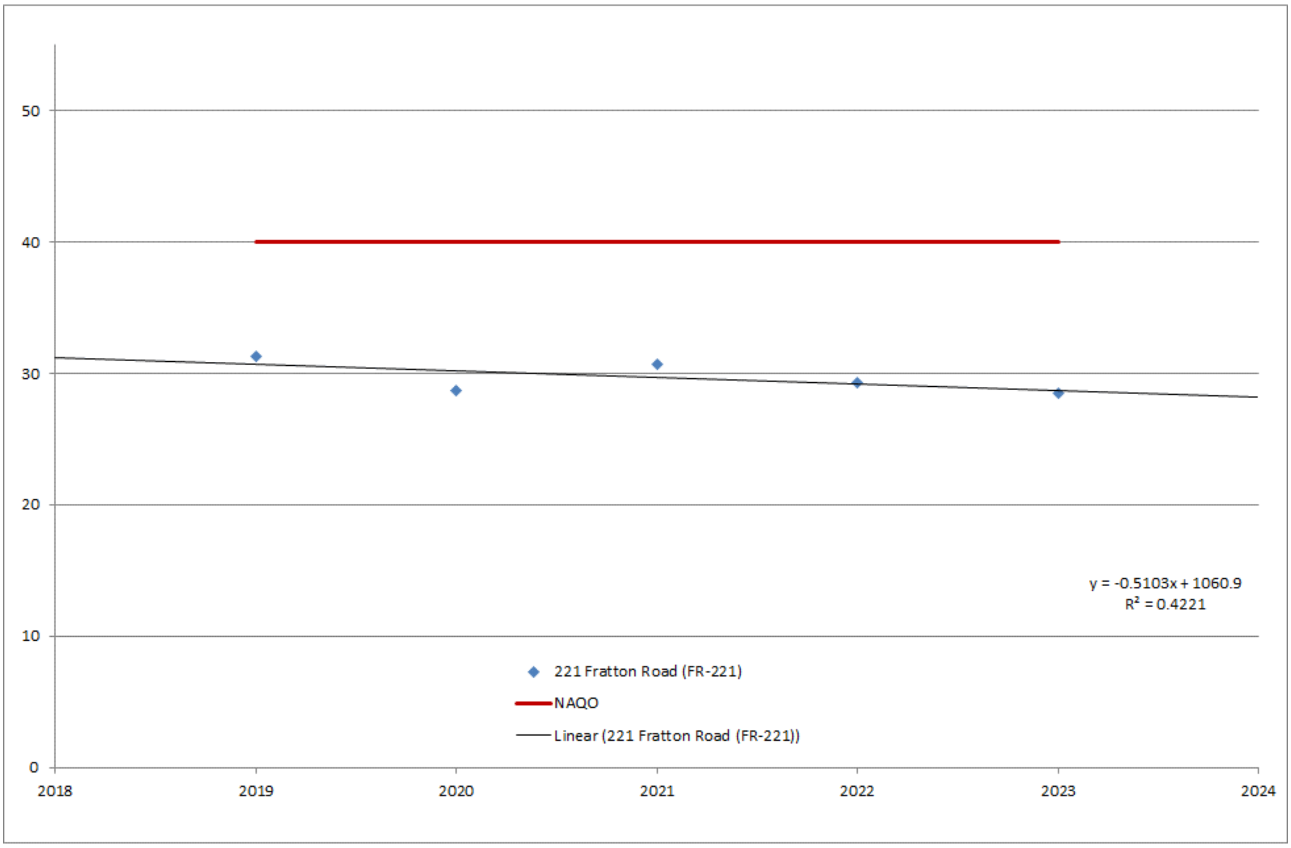
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 2.08µg/m^3 (a decrease of 5.83%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (33.61µg/m^3):

   - The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 84.02%.

   - In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

   - In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with the previously reported 5-year trend.

Figure F.16: 221 Fratton Road (FR-221)



Summary

No exceedance, short-term "beneficial", long-term "downward".

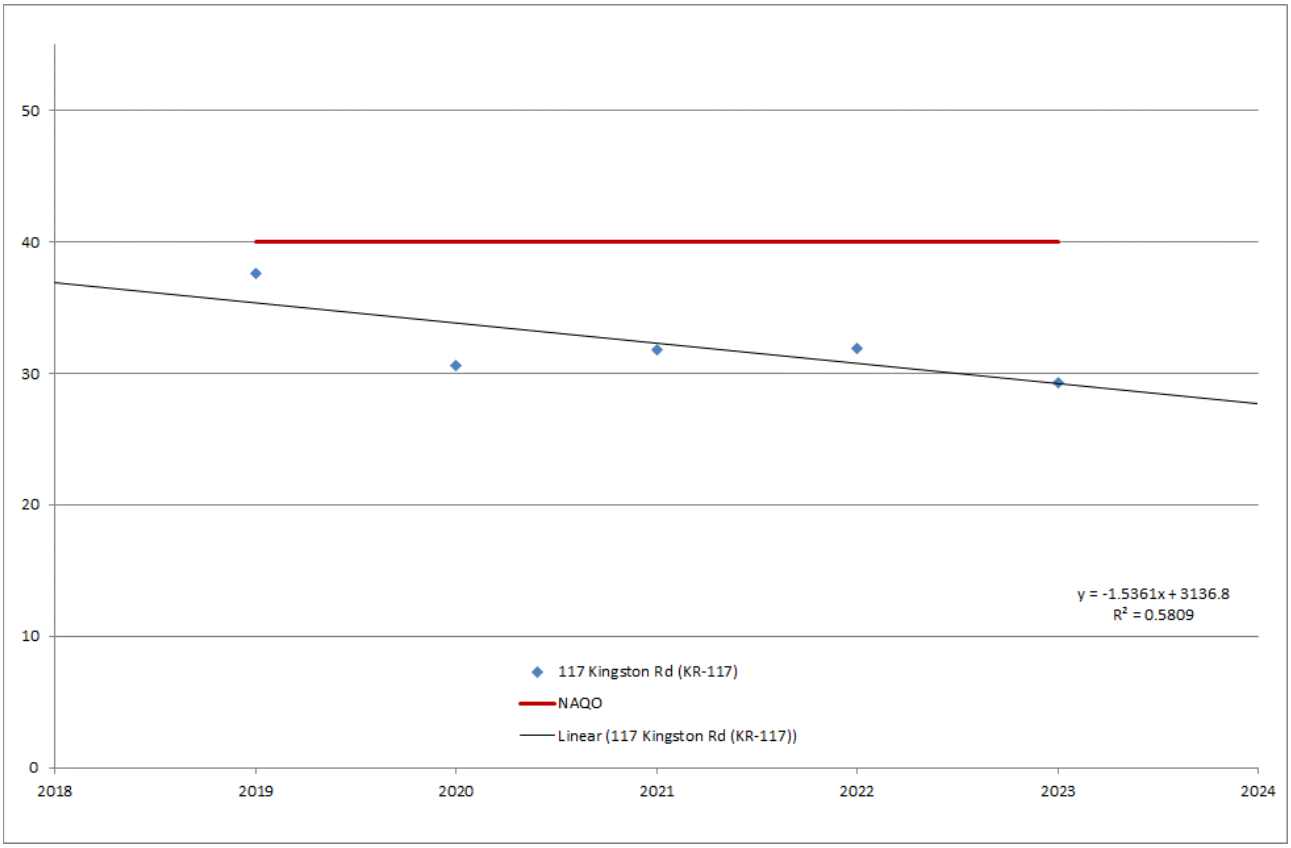
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 0.82 µg/m^3 (a decrease of 2.79%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (28.46µg/m^3):

    a. The NO_2 Annual Mean concentration at the monitored location as % of the NO_2 Annual Mean NAQO was 71.16%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years exhibited a LAQ improvement that is consistent with the previously reported 5-year trend.

Figure F.17: 117 Kingston Road (KR-117)



Summary

No exceedance, short-term "beneficial", long-term "downward".

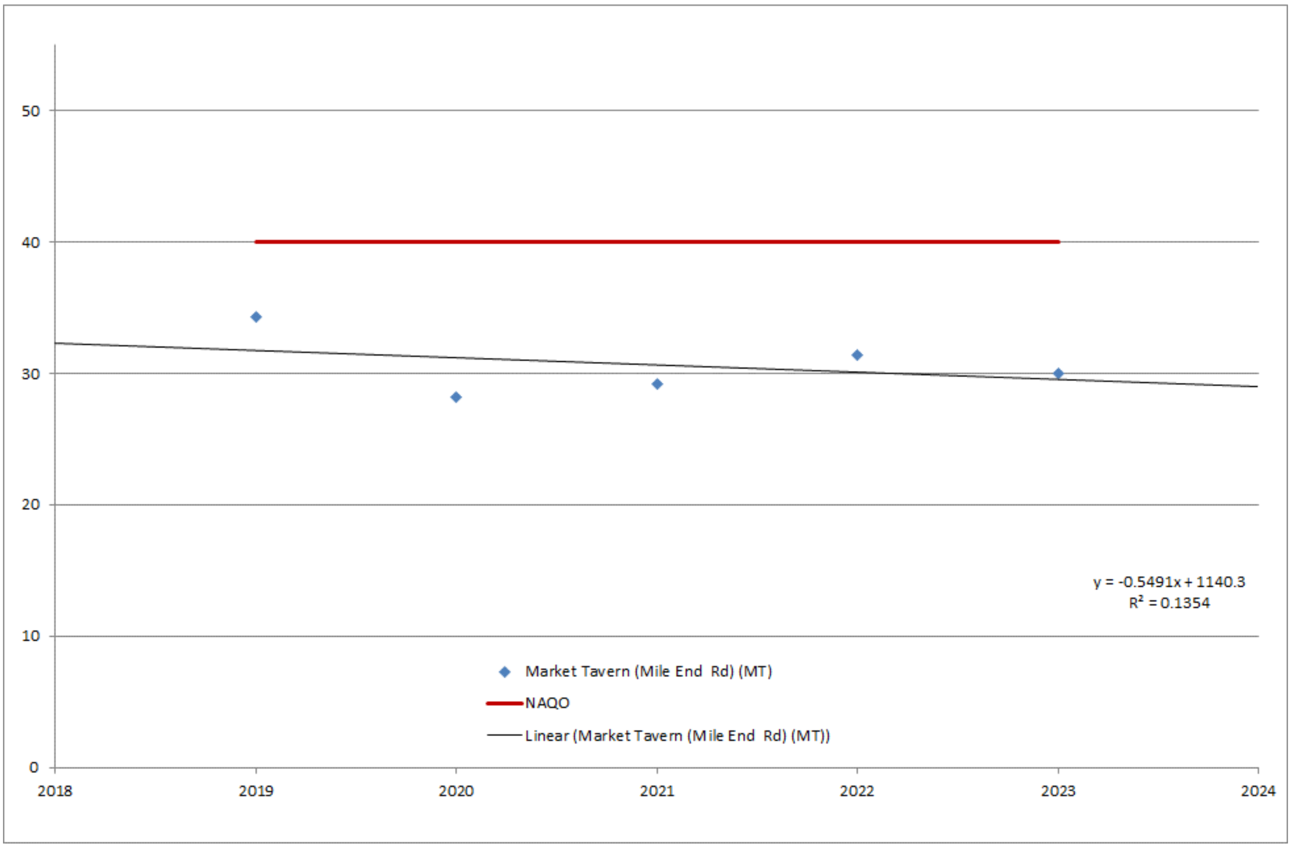
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 2.65µg/m^3 (a decrease of 8.29%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (29.29µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 73.23%.

    d. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    b. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years exhibited a LAQ improvement that is consistent with to the previously reported 5-year trend.

Figure F.18: Mile End Road "Market Tavern" PH, (MER-MT)



Summary

No exceedance, short-term "beneficial", long-term "downward".

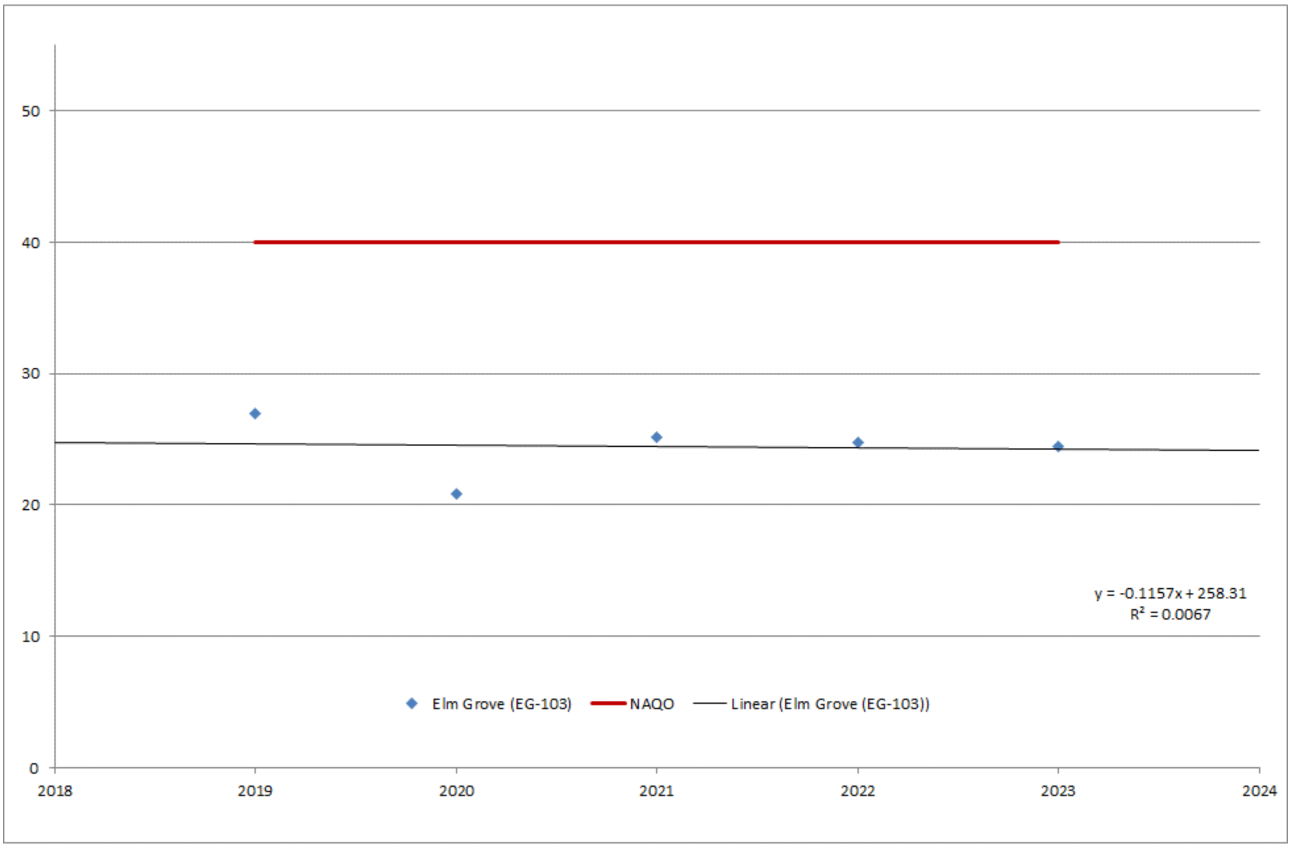
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 1.44µg/m^3 (a decrease of 4.58%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (29.95µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 74.88%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with to the previously reported 5 -year trend.

Figure F.19: 103 Elm Grove (EG-103)



Summary

No exceedance, short-term "beneficial", long-term "downward".

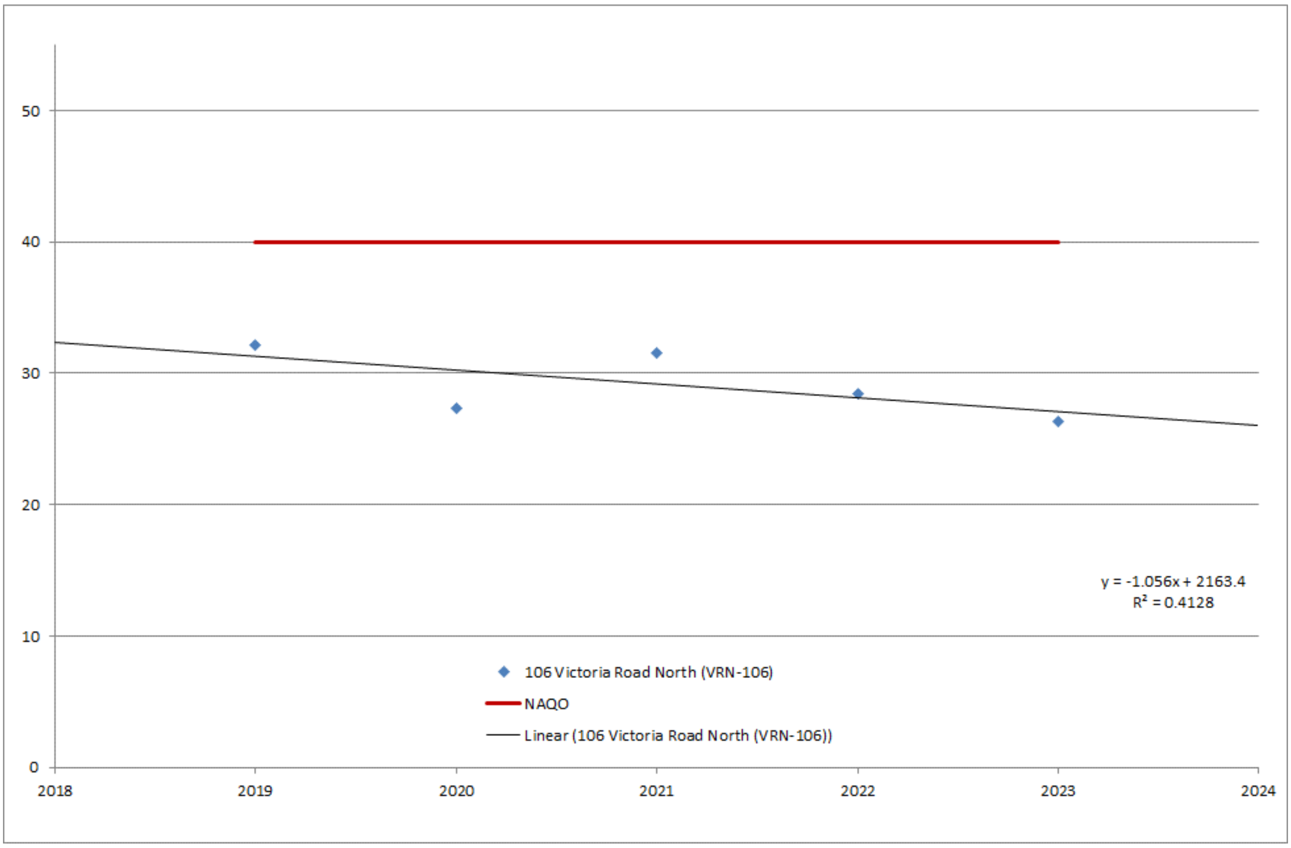
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 0.24µg/m^3 (a decrease of 0.96%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (24.50µg/m^3):

   a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 61.25%.

   e. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

   b. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years exhibited a LAQ improvement that is consistent with to the previously reported 5-year trend.

Figure F.20: 106 Victoria Road North (VRN-106)



Summary

No exceedance, short-term "beneficial", long-term "downward".

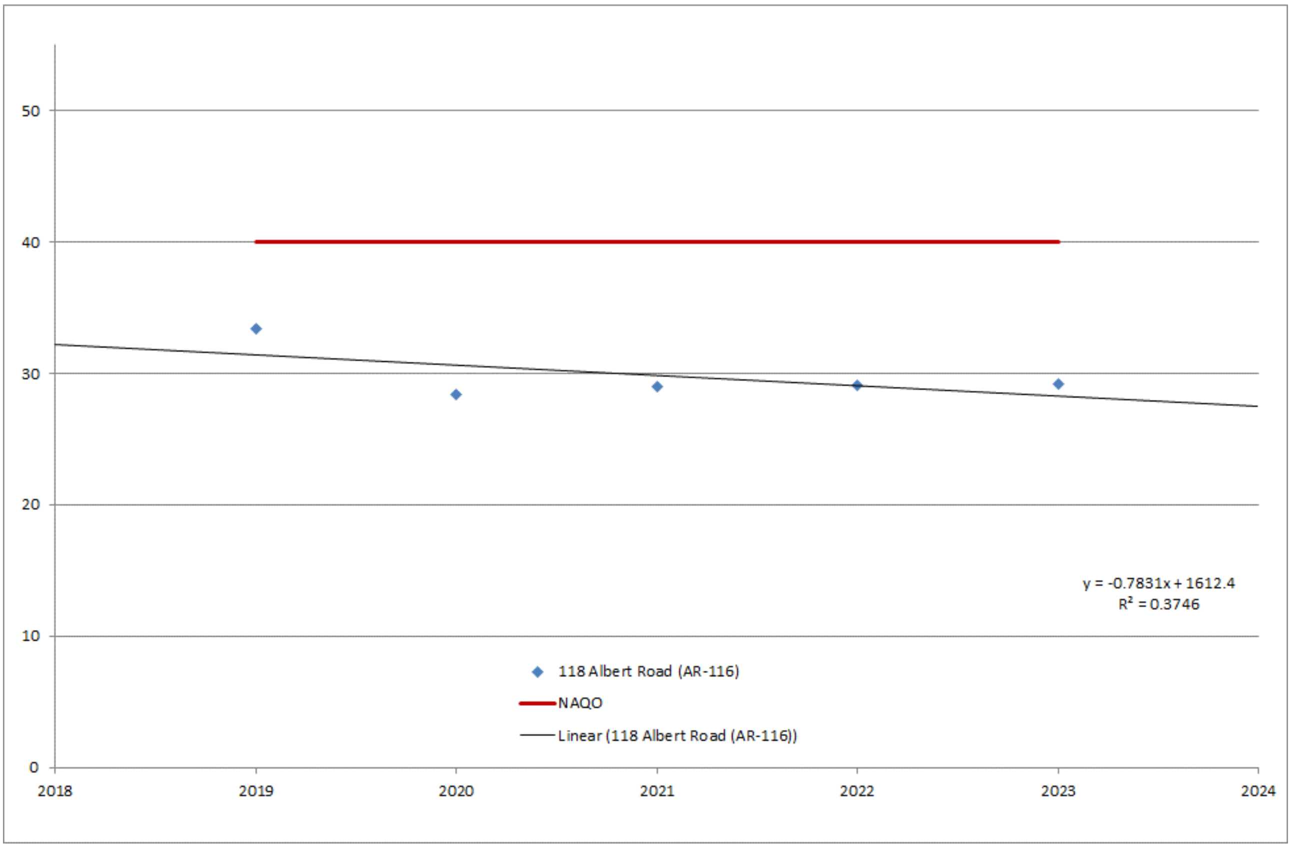
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 2.031µg/m^3 (a decrease of 7.14%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (26.37µg/m^3):

    f. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 65.93%.

    g. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    a. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with to the previously reported 5-year trend.

Figure F.21: 116 Albert Road (AR-116)



Summary

No exceedance, short-term "adverse", long-term "downward".

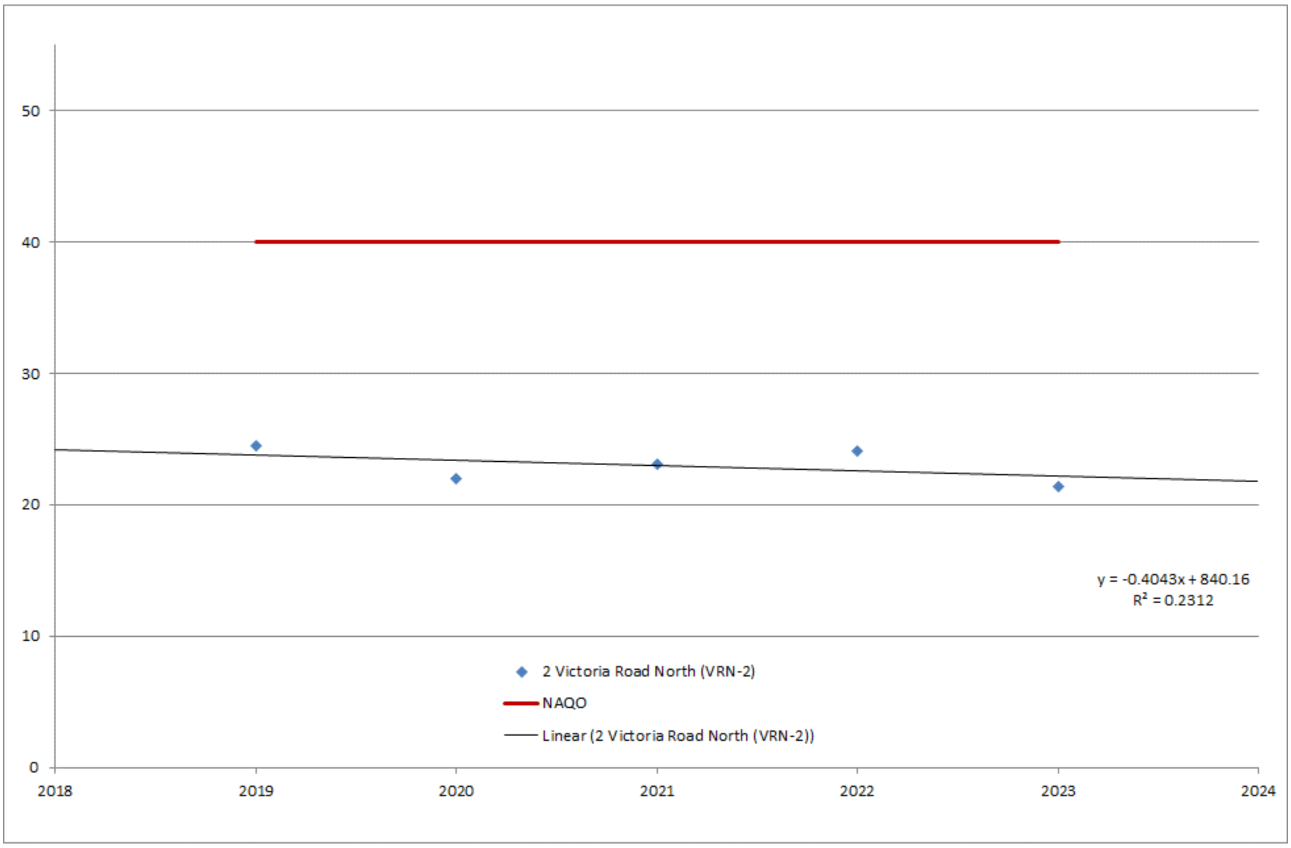
1. The NO_2 Annual Mean at this roadside monitoring location increased by 0.08µg/m^3 (an increase of 0.27%) between 2022 and 2023 but remained below the NO_2 Annual Mean NAQO in 2023 (29.17µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 72.92%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean increase is described as "adverse". Hence, LAQ deterioration.

    c. In the long-term, however, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with to the previously reported 5-year trend.

Figure F.22: 2 Victoria Road North (VRN-2)



Summary

No exceedance, short-term "beneficial", long-term "downward".

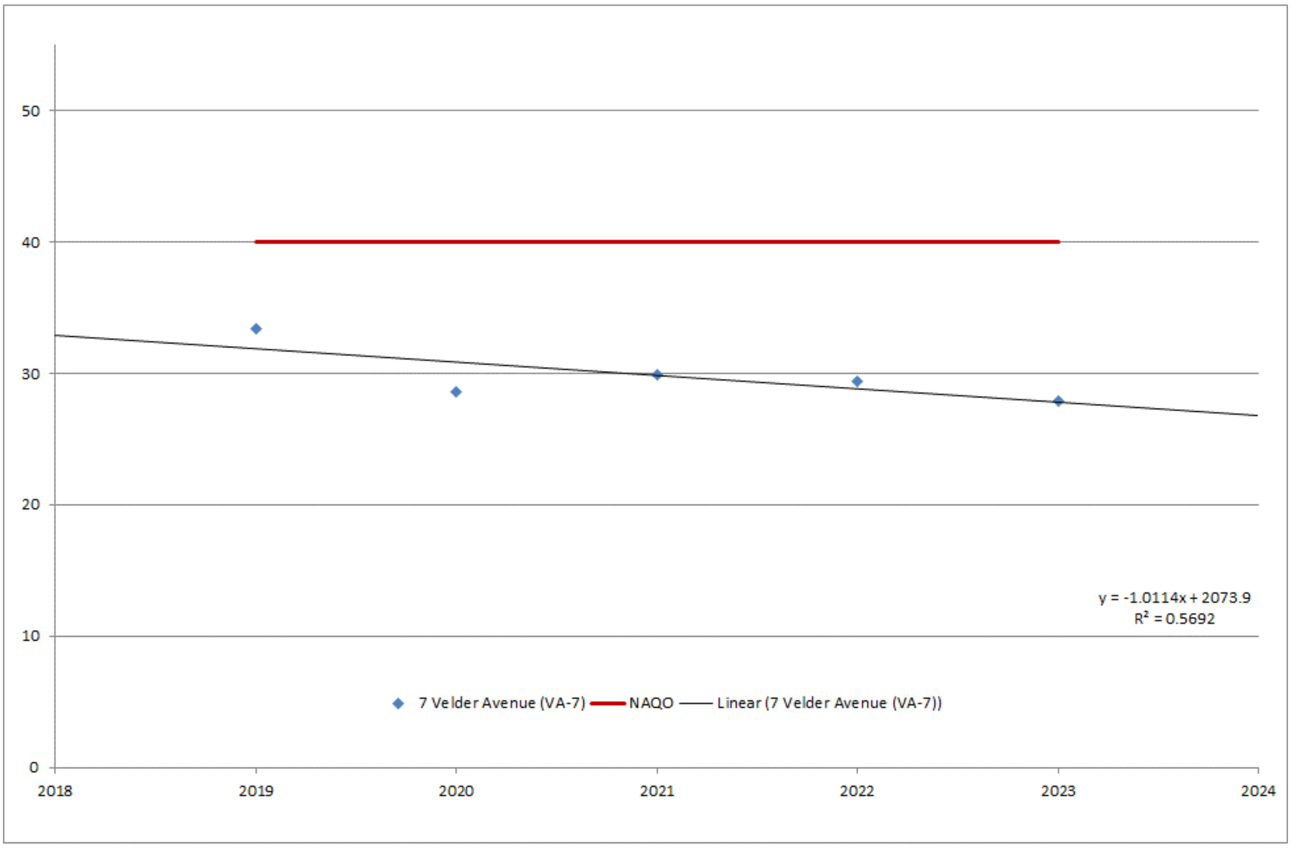
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 2.70µg/m^3 (a decrease of 11.21%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (21.4µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 53.5%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with to the previously reported 5-year trend.

Figure F.23: 7 Velder Avenue (VA-7)



Summary

No exceedance, short-term "beneficial", long-term "downward".

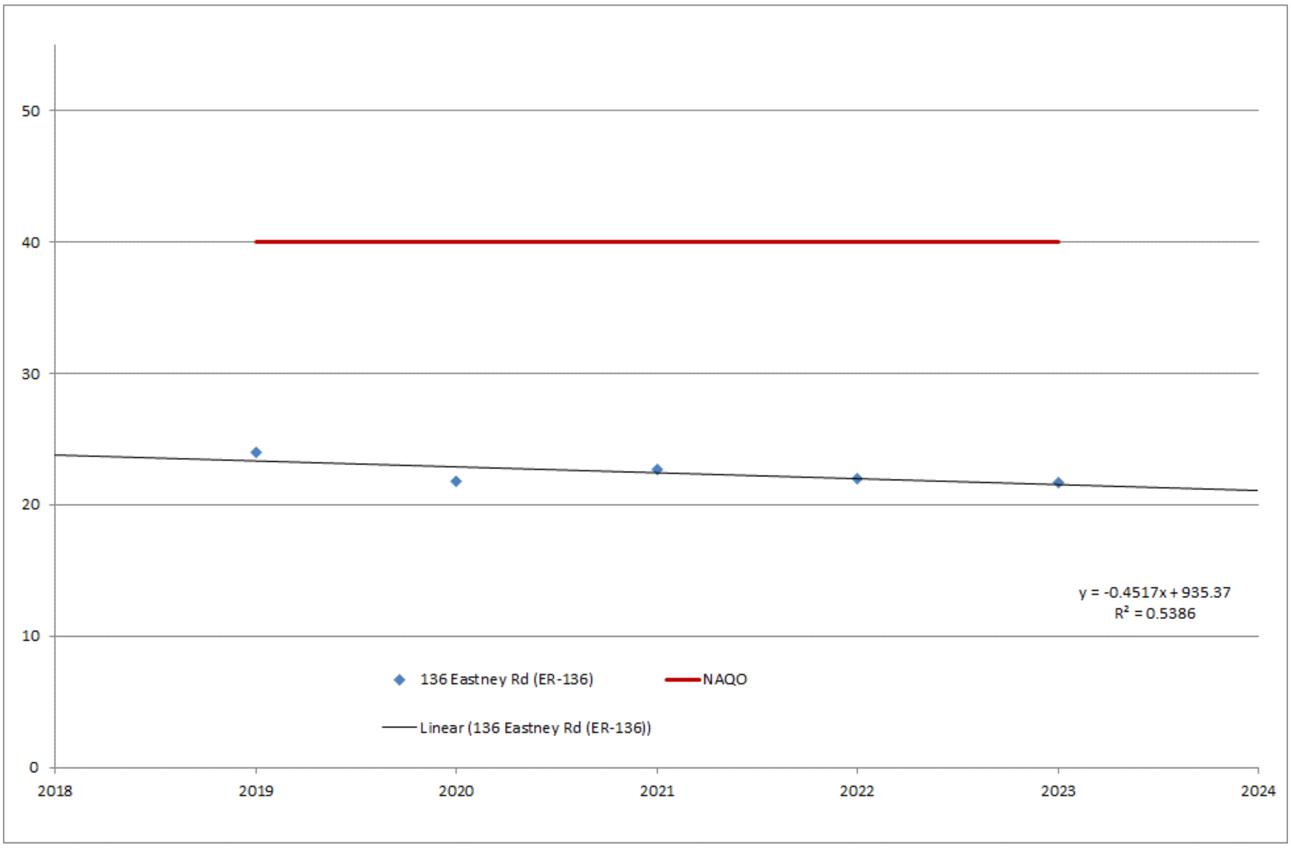
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 1.48µg/m^3 (a decrease of 5.04%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (27.92µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 69.80%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with the previously reported 5-year trend.

Figure F.24: 136 Eastney Road (ER-136)



Summary

No exceedance, short-term "beneficial", long-term "downward".

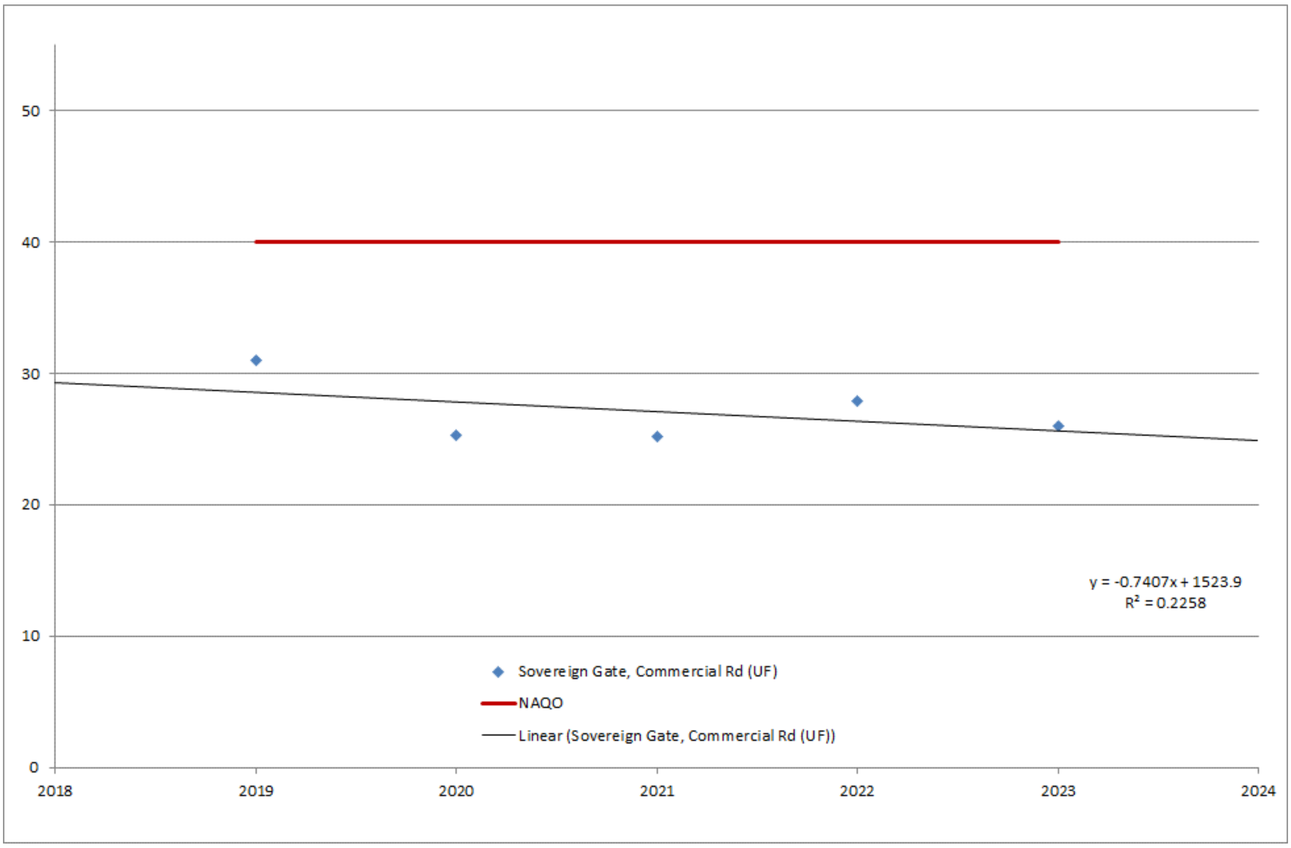
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 0.37µg/m^3 (a decrease of 1.68%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (21.64µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 54.10%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with to the previously reported 5-year trend.

Figure F.25: Sovereign Gate Commercial Road (ComR- UF)



Summary

No exceedance, short-term "beneficial", long-term "downward".

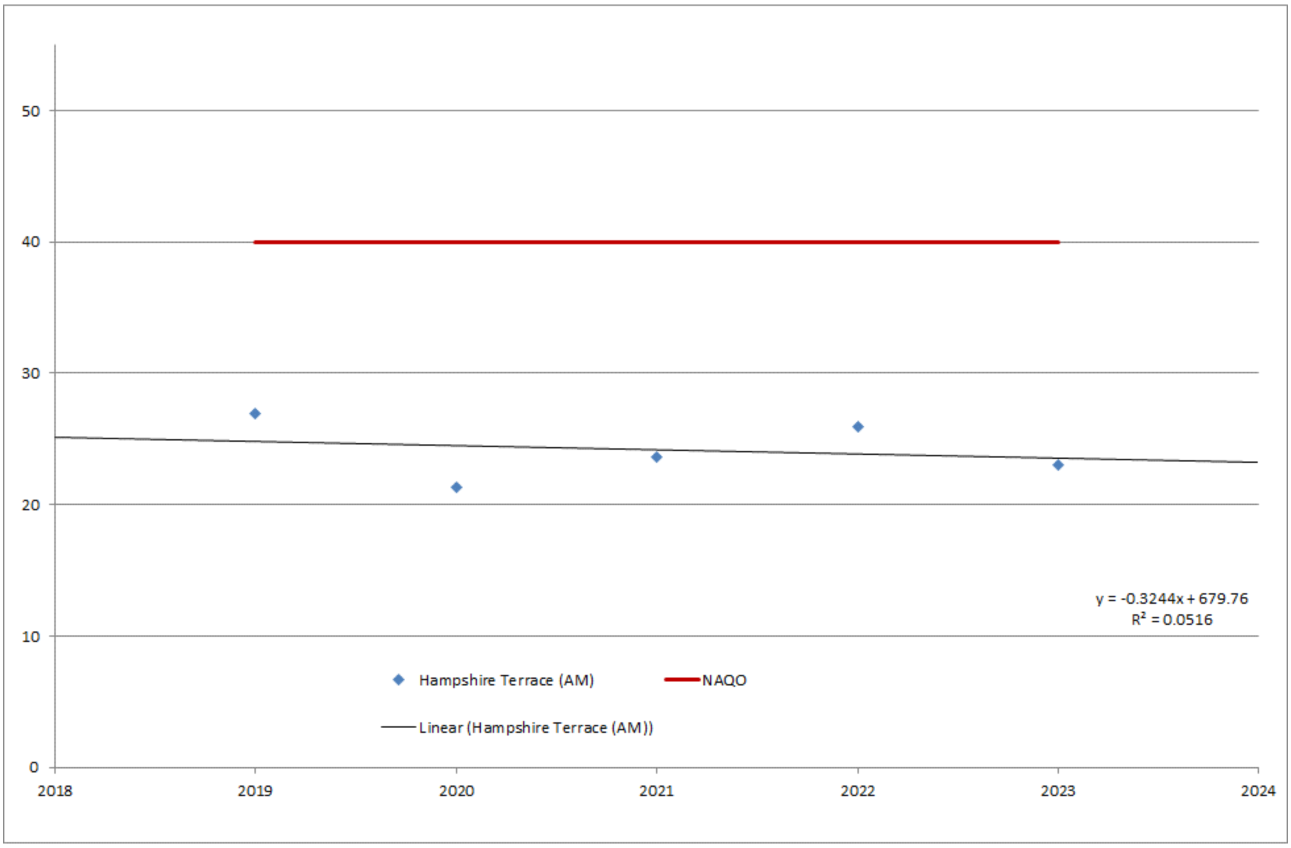
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 1.96µg/m^3 (a decrease of 7.01%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (25.97µg/m^3):

   a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 64.93%.

   b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

   c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years exhibited a LAQ improvement that is consistent with to the previously reported 5-year trend.

Figure F.26: 11/12 Hampshire Terrace (HT-AM)



Summary

No exceedance, short-term "beneficial", long-term "downward".

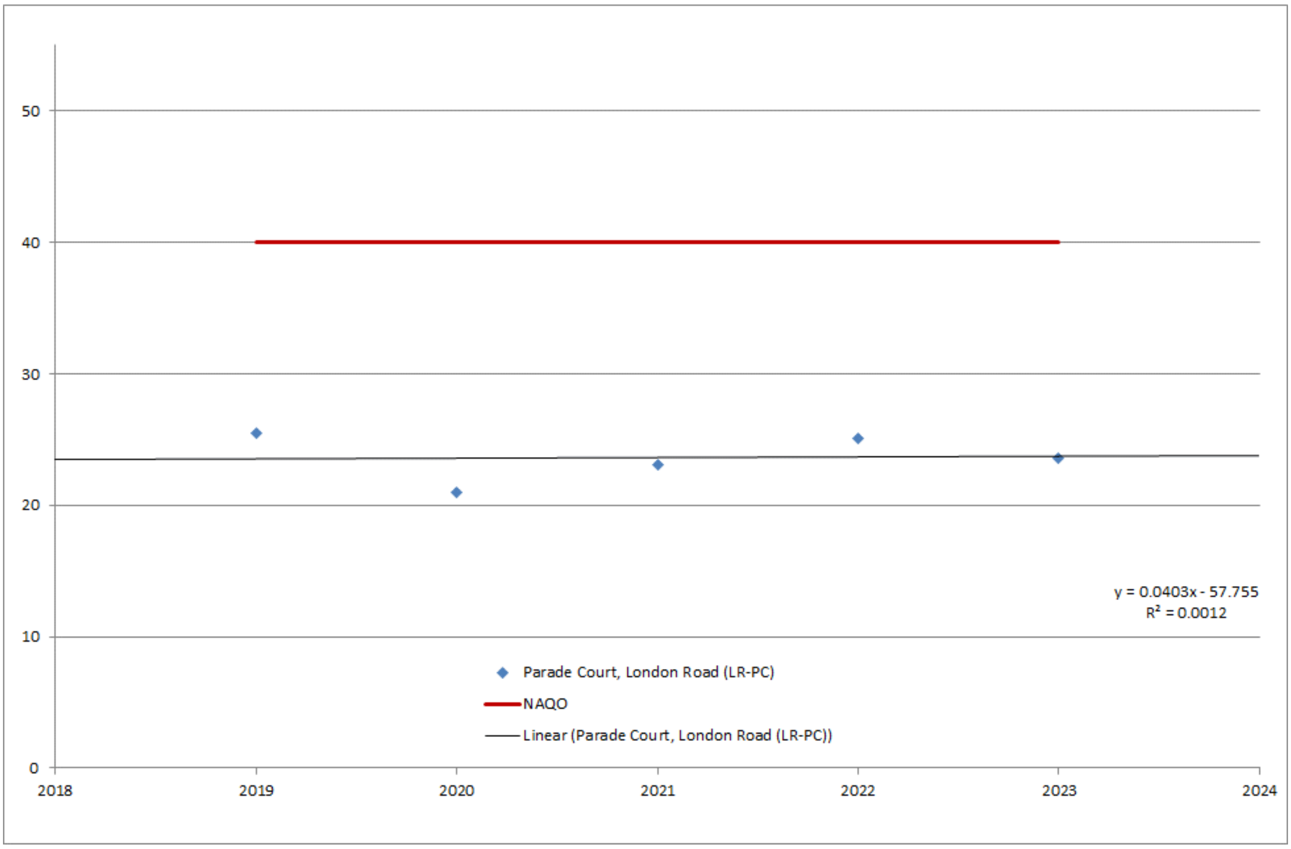
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 2.99µg/m^3 (a decrease of 11.53%) between 2022 and 2023 and remained below the NAQO in 2023 (22.99µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 57.46%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with to the previously reported 5-year trend.

Figure F.27: London Road Parade Court (LR-PC)



Summary

No exceedance, short-term "beneficial", long-term "upward".

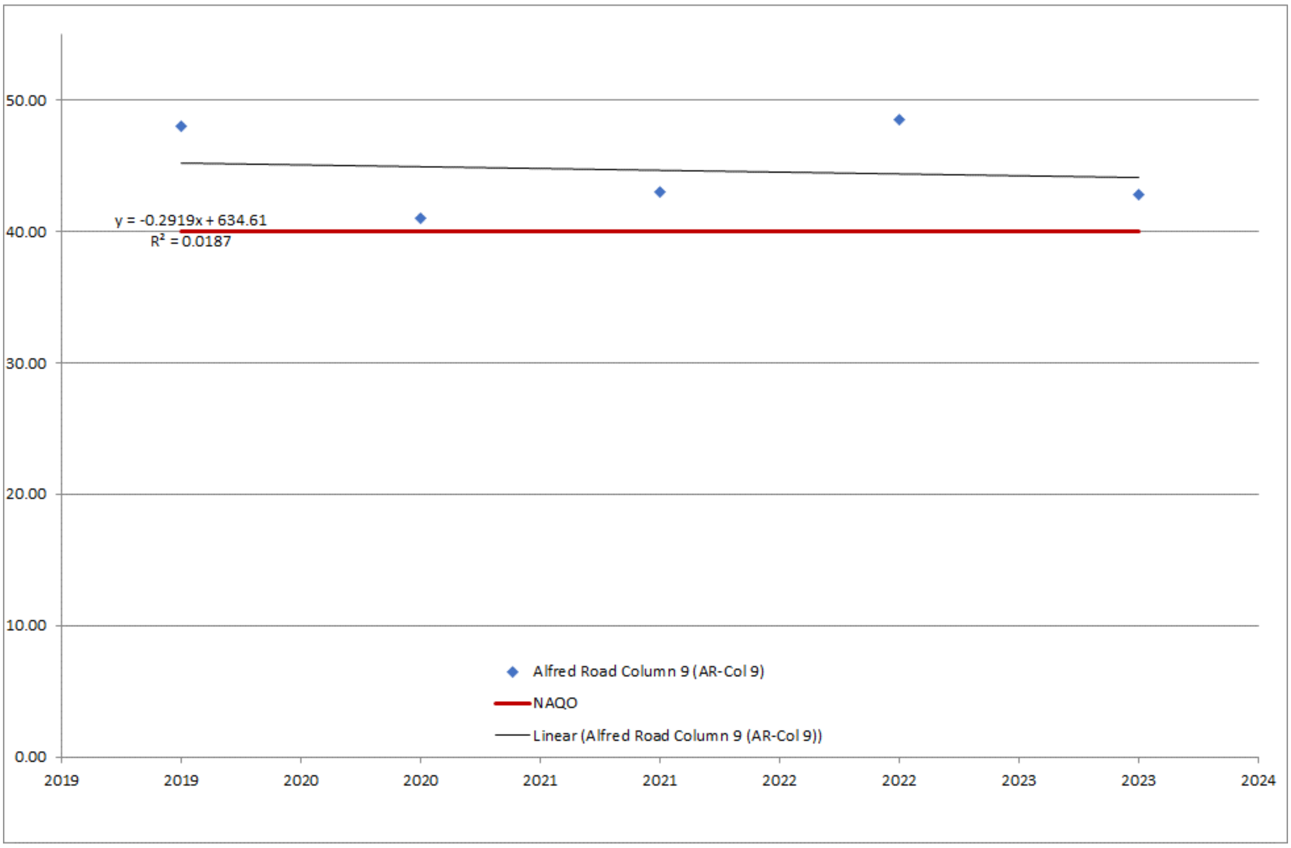
1. The NO_2 Annual Mean at this roadside monitoring location decreased for the second consecutive year by 1.54µg/m^3 (a decrease of 6.14%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (23.56µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 58.90%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    c. In the long-term, however, the NO_2 Annual Mean "upward" trend in the last 5 years exhibited a LAQ deterioration.

Figure F.28: Alfred Road Column 9 (AR-Col9)



Summary

Exceedance, short-term "beneficial", long-term "downward".

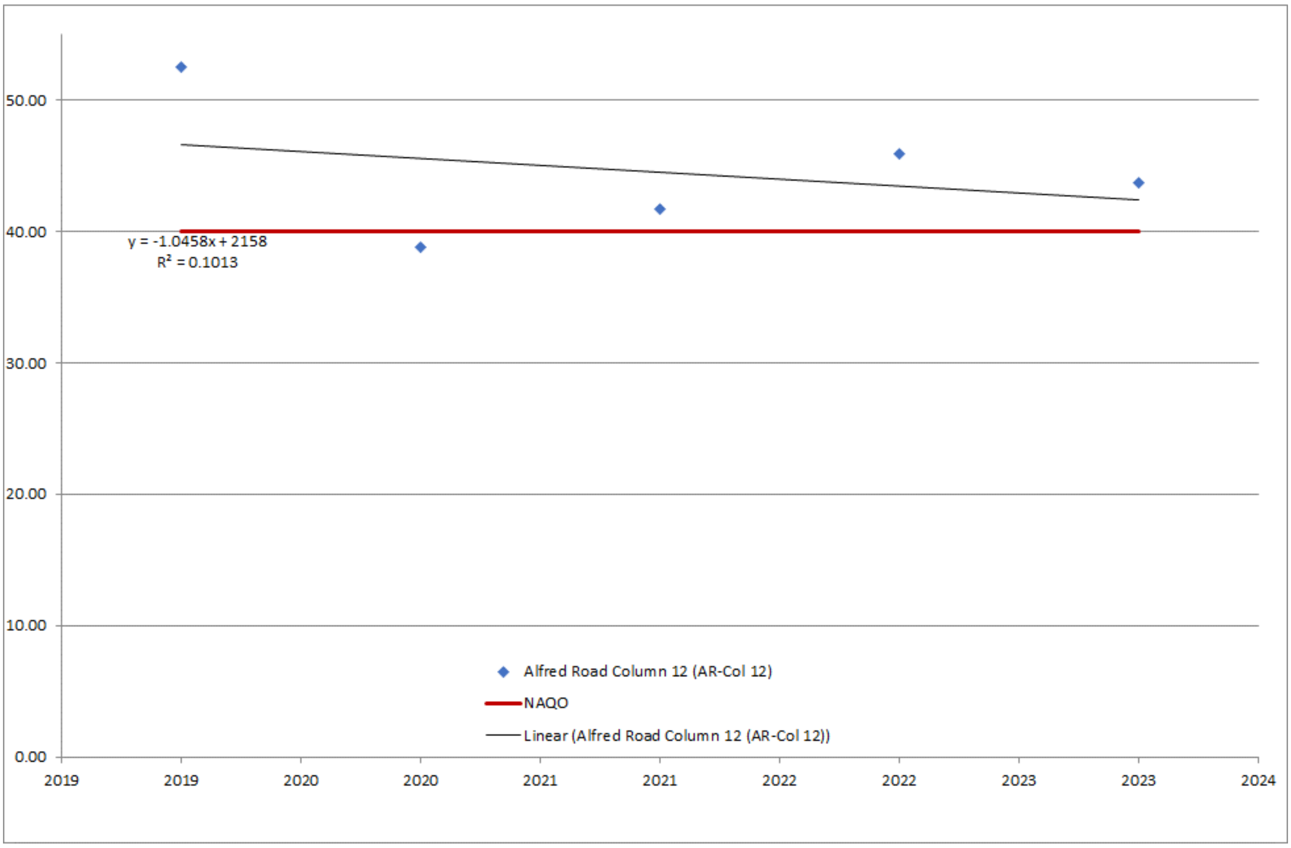
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 5.57 µg/m^3 (a decrease of 11.85%) between 2022 and 2023 and remained more than the NO_2 Annual Mean NAQO in 2023 (42.79 µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 106.97%. However, in the lack of relevant exposure in the vicinity, this does not constitute a beach of NO_2 Annual Mean NAQO.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years exhibited a LAQ improvement.

Figure F.29: Alfred Road Column 12 (AR-Col12)



Summary

Exceedance, short-term "beneficial", long-term "downward'.'

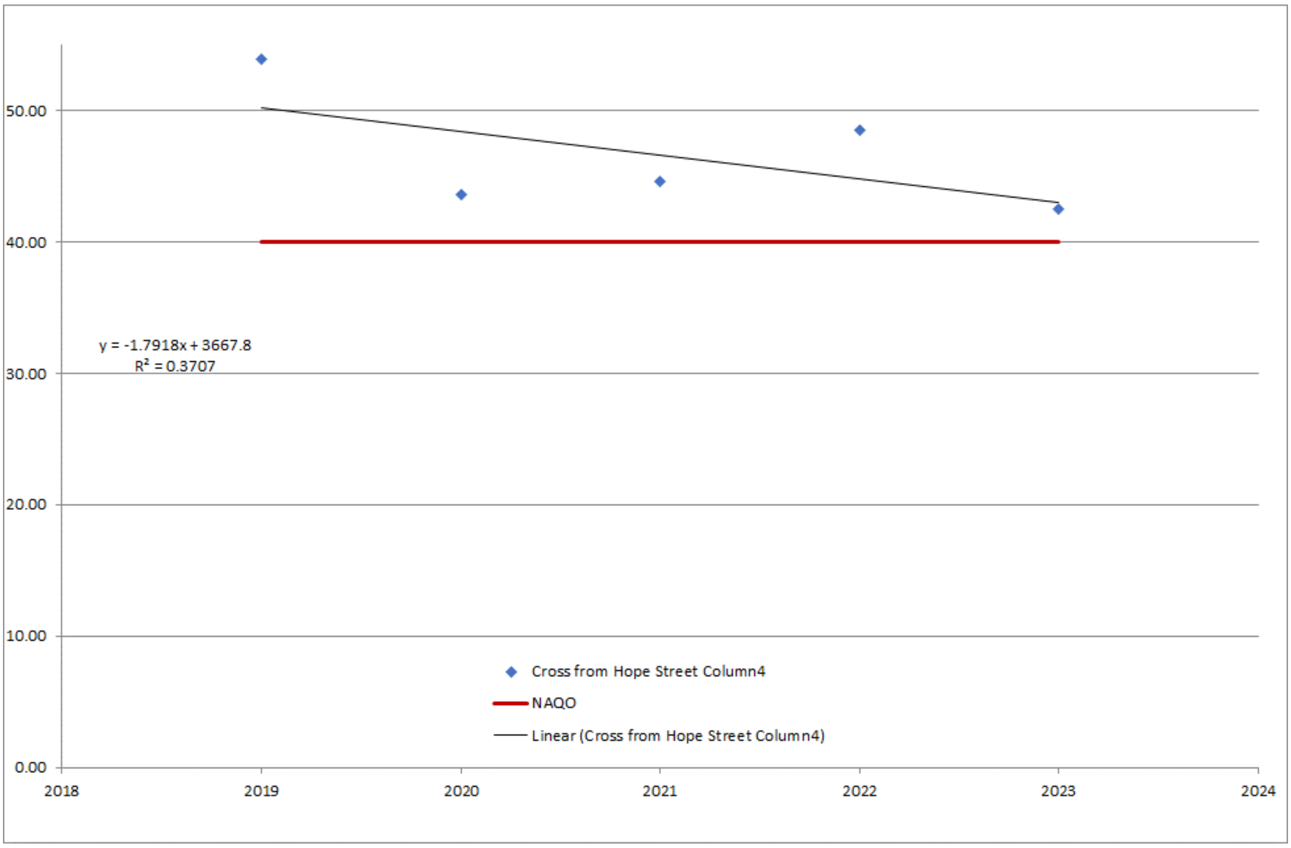
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 2.18 µg/m^3 (a decrease of 4.76%) between 2022 and 2023 to remain in breach of the NO_2 Annual Mean NAQO in 2023 (42.79 µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 106.97%. However, in the lack of relevant exposure in the vicinity, this does not constitute a beach of NO_2 Annual Mean NAQO.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, LAQ improvement.

    c. In the long-term the NO_2 Annual Mean exhibited a "downward" in the last 5 years. Hence, a LAQ improvement.

Figure F.30: Hope Street Opposite Column 4 (HS-OCol4)



Summary

Exceedance, short-term "beneficial", long-term "downward'.

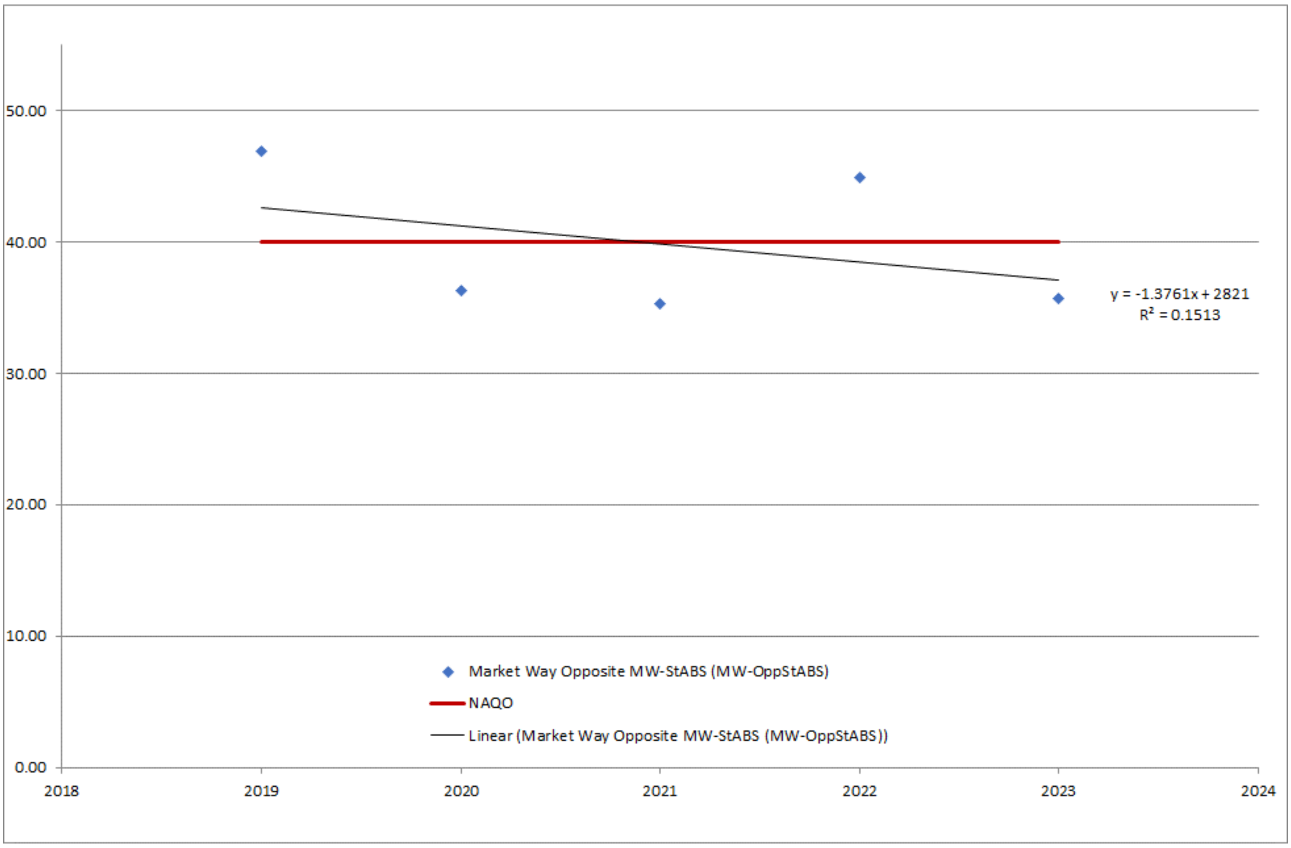
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 5.96 µg/m^3 (a decrease of 12.30%) between 2022 and 2023 and remained above the NO_2 Annual Mean NAQO in 2023 (42.51 µg/m^3):

   a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 106.27%. However, in the lack of relevant exposure in the vicinity, this does not constitute a beach of NO_2 Annual Mean NAQO.

   b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

   d. In the long-term, however, in the long-term the NO_2 Annual Mean exhibited a "downward" trend between 2019 and 2023. Hence, a LAQ improvement.

Figure F.31: Market Way Opposite MW-StABS, (MW-OStABS).



Summary

Exceedance, short-term "beneficial", long-term "downward".

1. The NO_2 Annual Mean at this roadside monitoring location decreased by 9.15 µg/m^3 (a decrease of 20.38%) between 2022 and 2023 to fall below NO_2 Annual Mean NAQO in 2023 (35.73 µg/m^3):

   a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 89.32%.

   b. In the short-term, the 2021-2022 NO_2 Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

   c. In the long-term, however, the NO_2 Annual Mean exhibited a "downward" trend in the last 5 years (2022-2023). Hence, a LAQ improvement.

Figure F.32: Prospect Road Column 3 (PR-Col3)

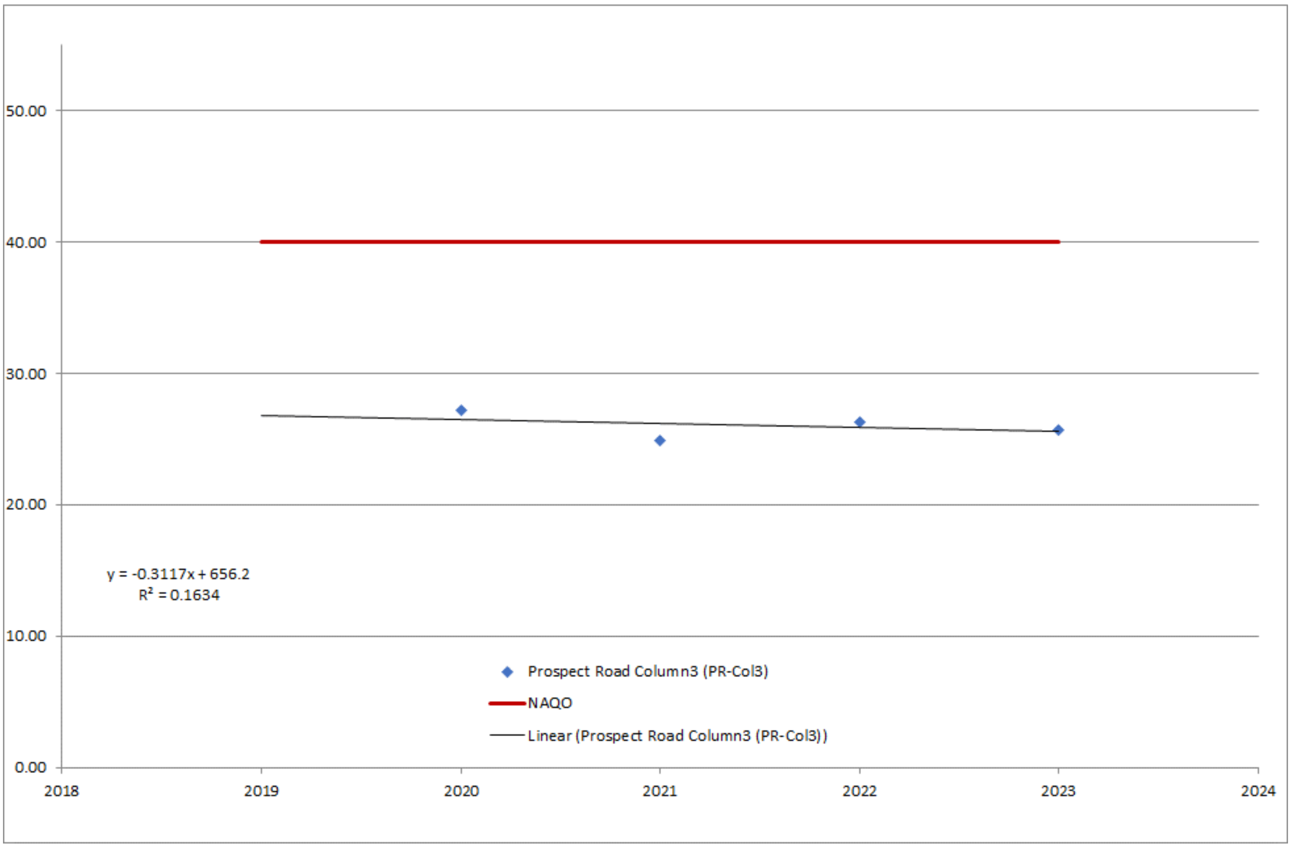


Figure F.33: 58 Kingston Road (KR-58)

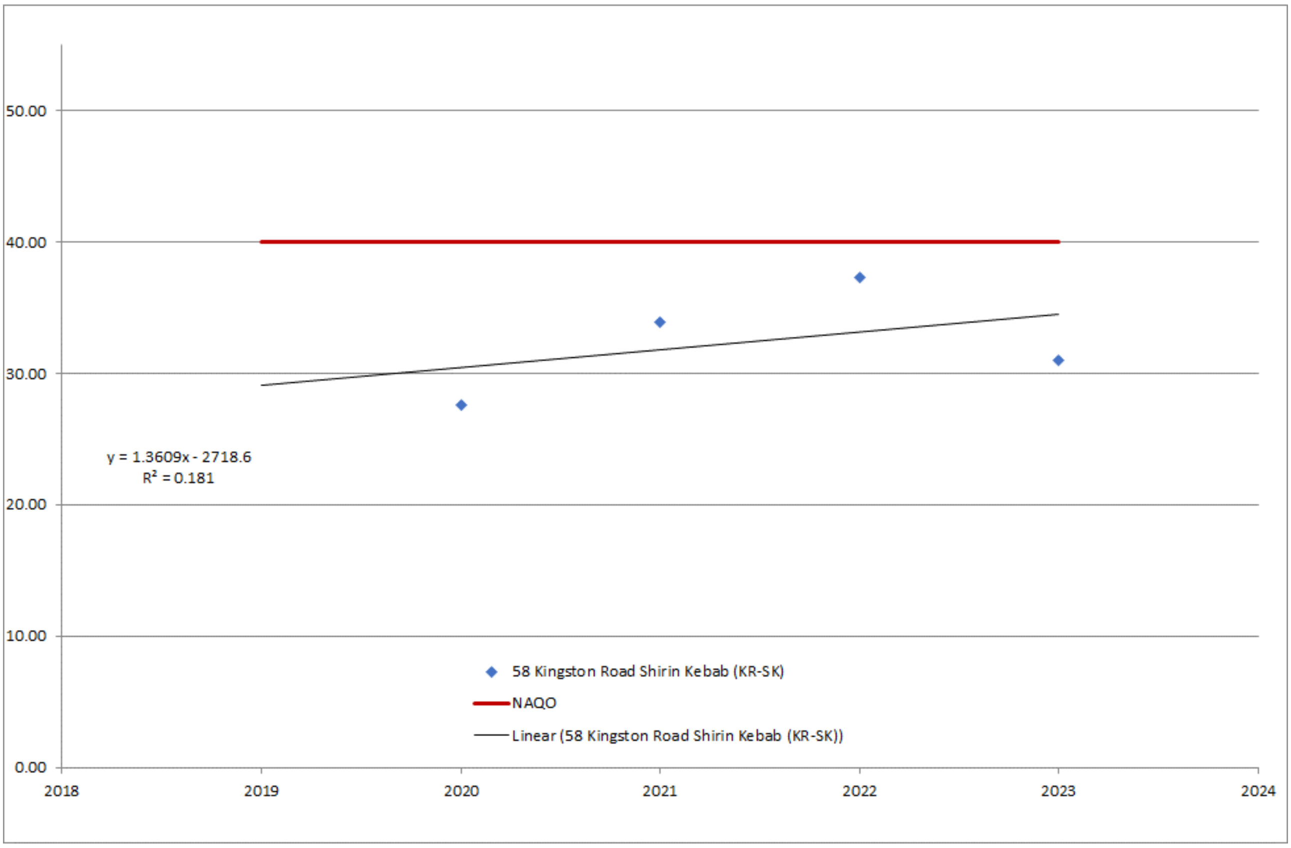


Figure F.34: Goldsmith Avenue Front Garden (GA-FG)

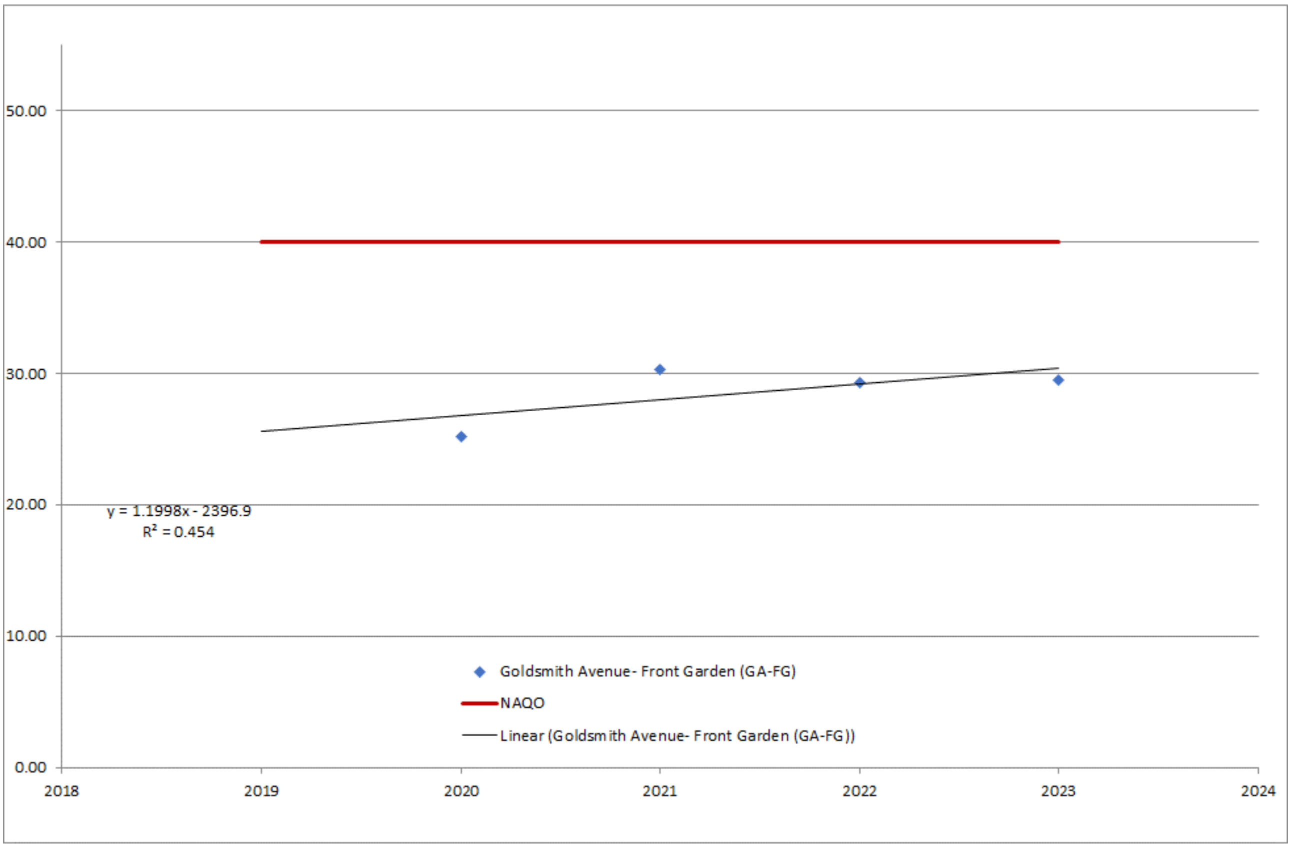


Figure F.35: 48 New Road (NR-48)

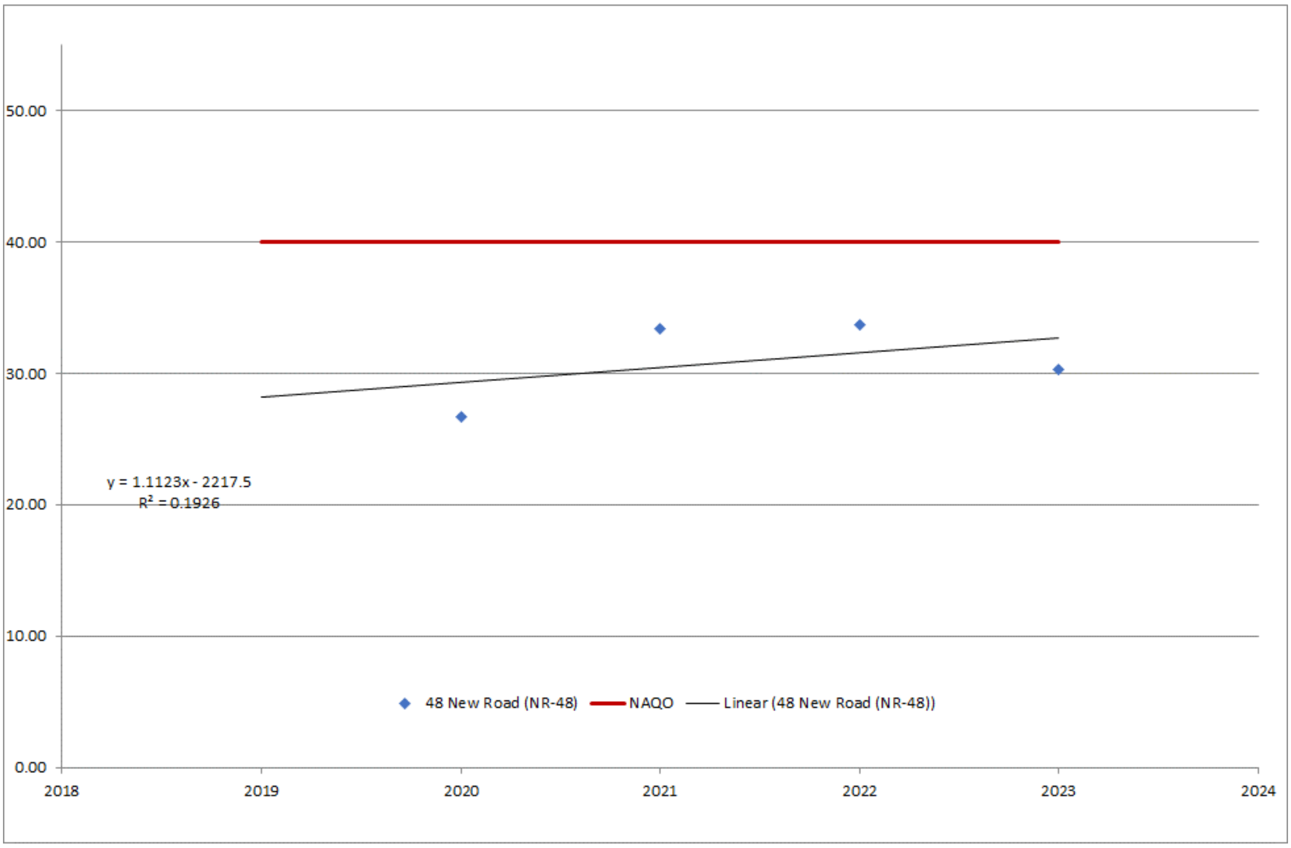
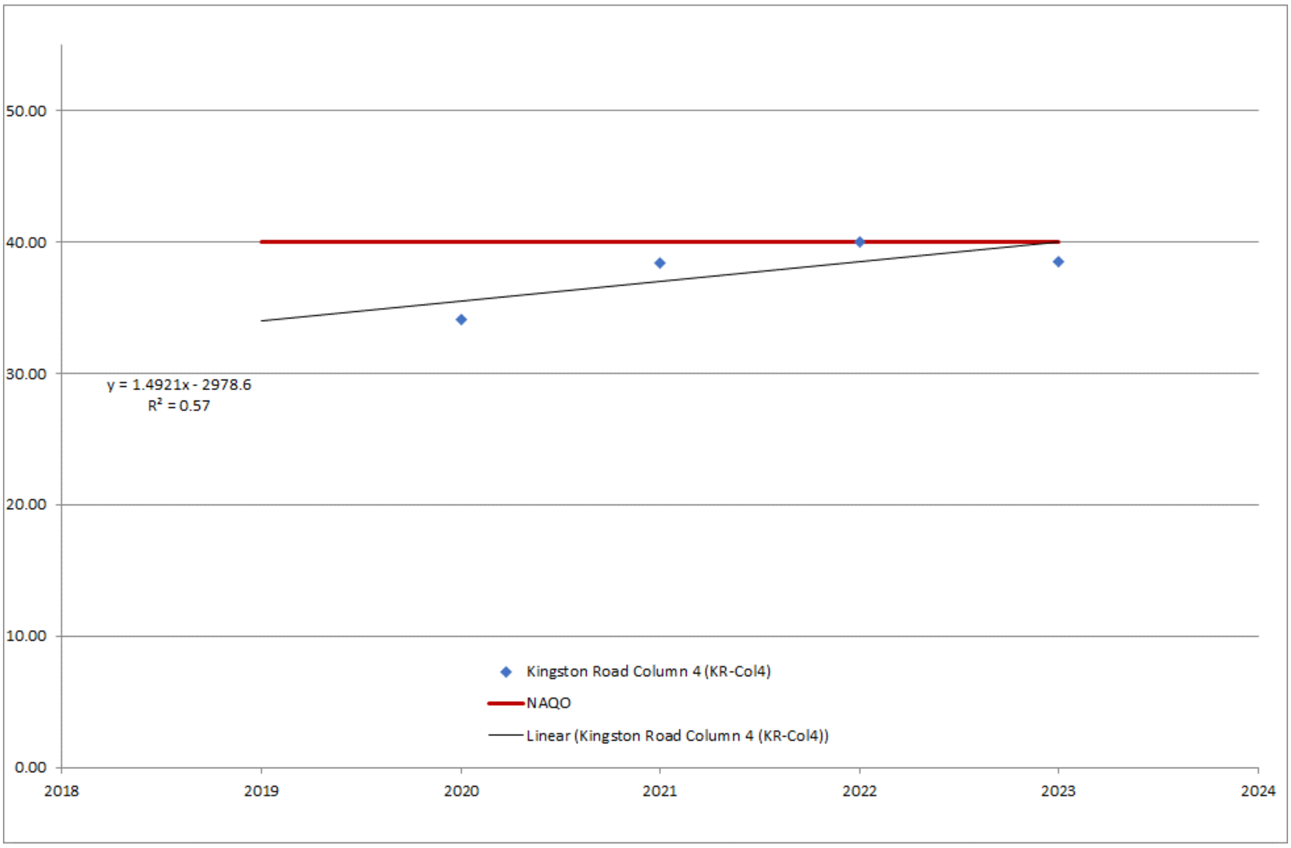


Figure F.36: Kingston Road Column 4 (KR-Col4)



Summary

Exceedance, short-term "beneficial", long-term "upward".

1. The NO_2 Annual Mean at this kerbside monitoring location decreased for the third consecutive year by 1.47 µg/m^3 (a decrease of 3.68%) between 2022 and 2023 to reach the NO_2 Annual Mean NAQO in 2023 (38.53 µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 96.32%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean decrease is described as "beneficial". Hence, a LAQ improvement.

    c. In the long-term the NO_2 Annual Mean exhibited an "upward" trend between 2020 and 2023 (in the last four years). Hence, a LAQ deterioration.

Figure F.37: Kingston Crescent-Admiral Drake PH- (KC-ADPH)

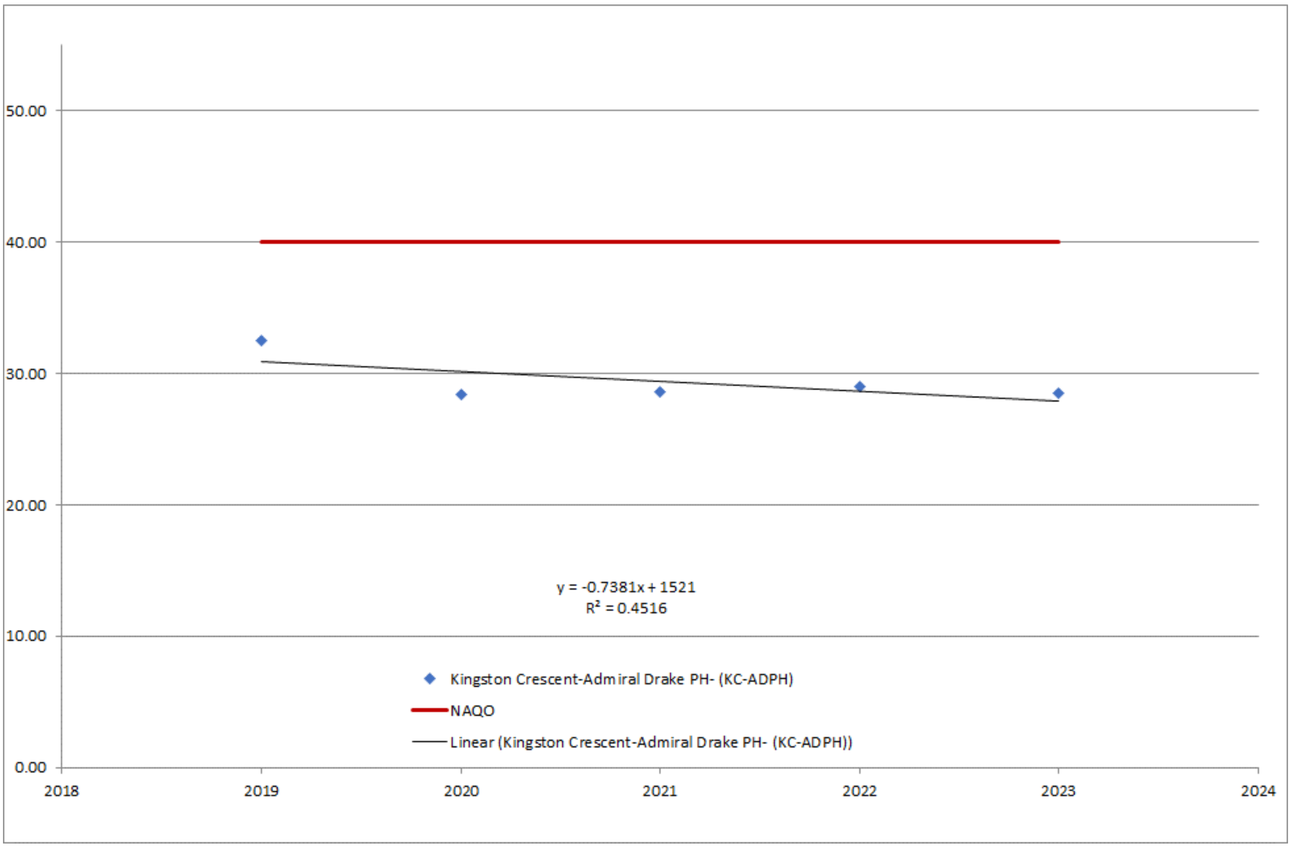


Figure F.38: 84-88 Kingston Crescent (KC-VH)

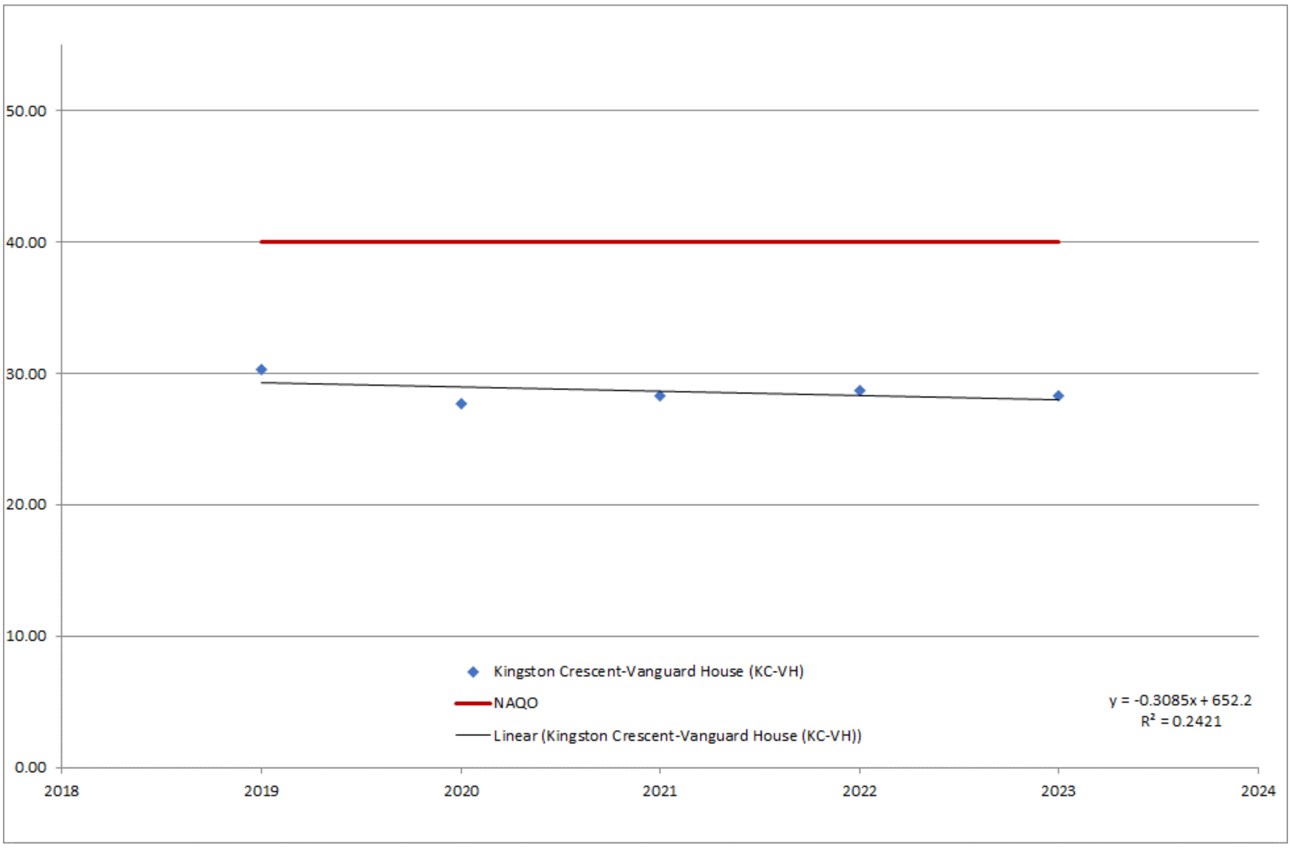


Figure F.39: Market Way Opposite 6 (MW-Opp6)

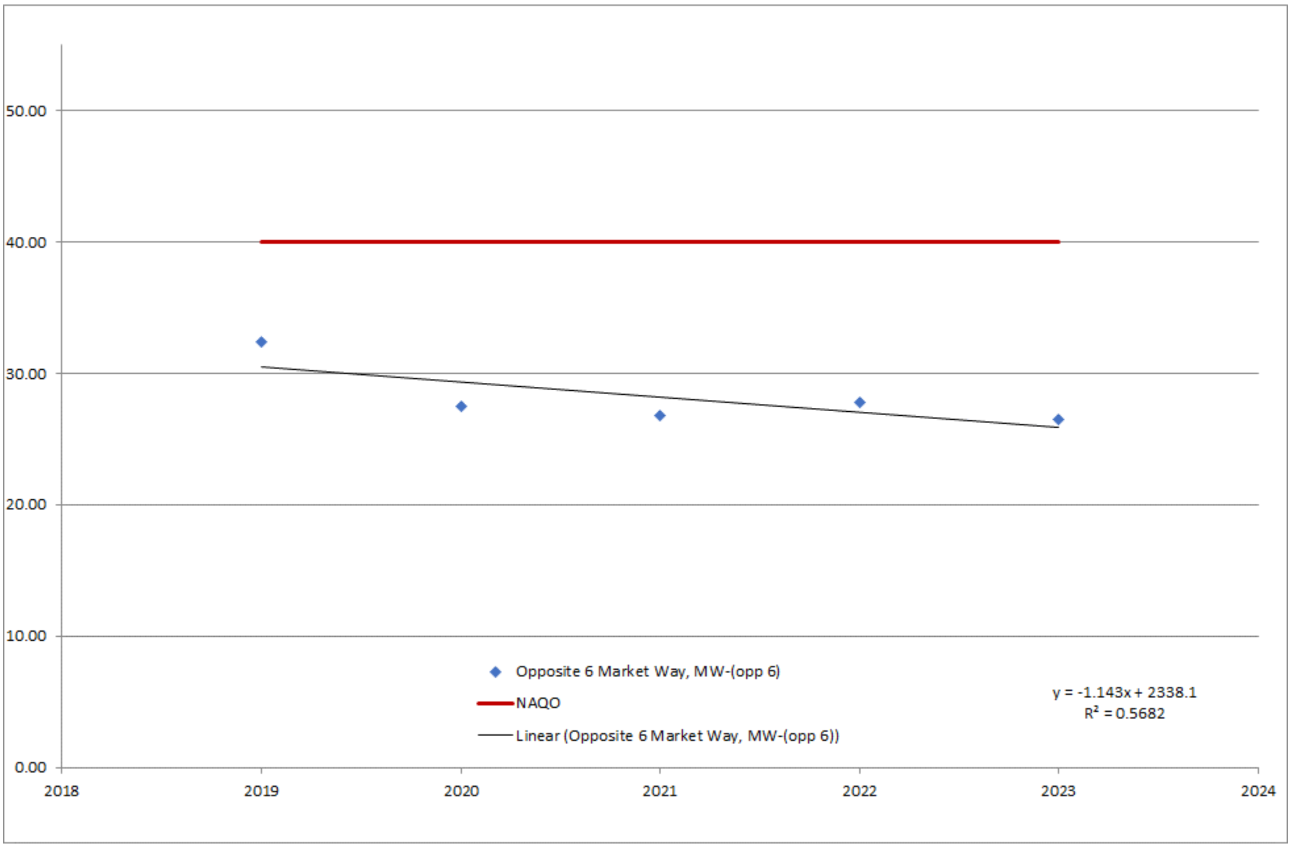


Figure F.40: 5 Market Way (MW-4)

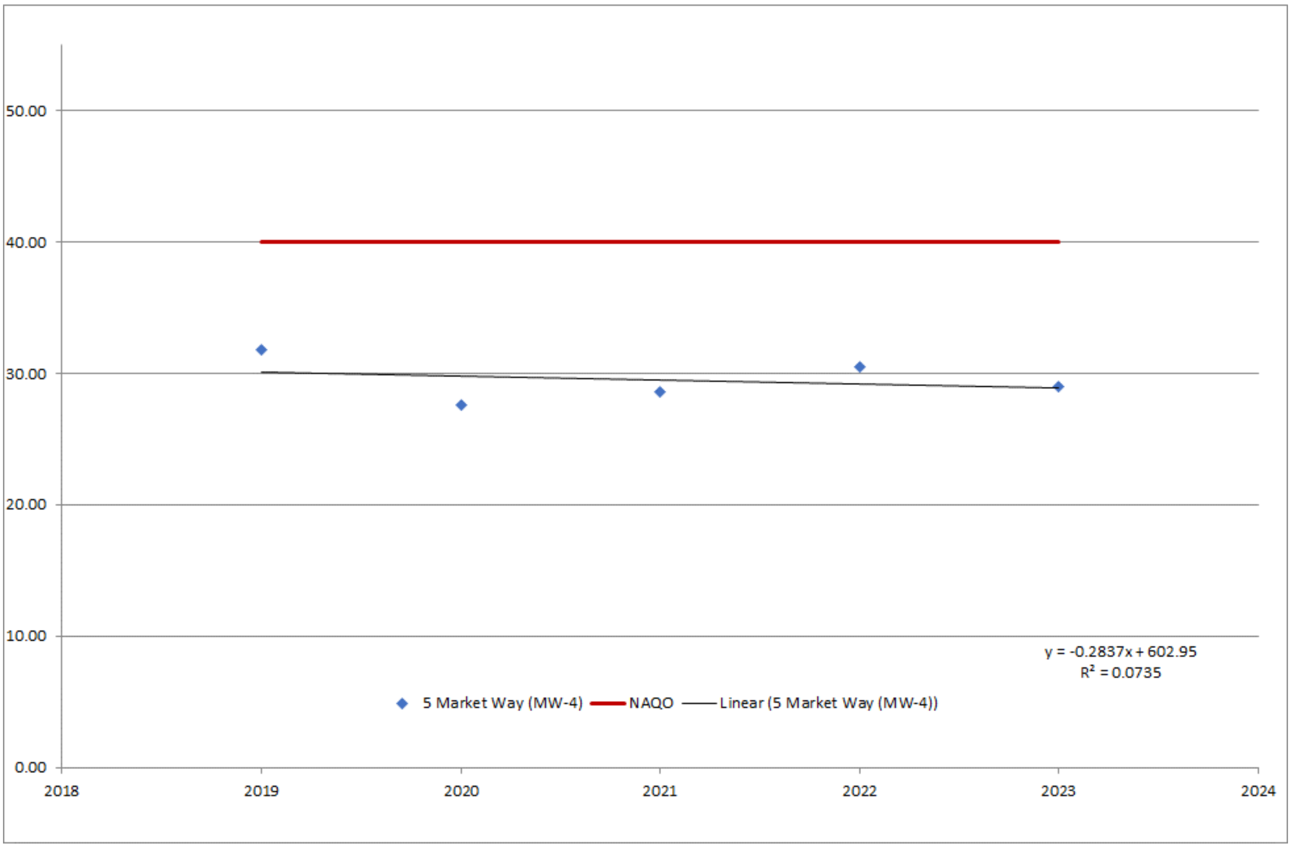


Figure F.41: Mile End Road Column 5 (MER-Col5)

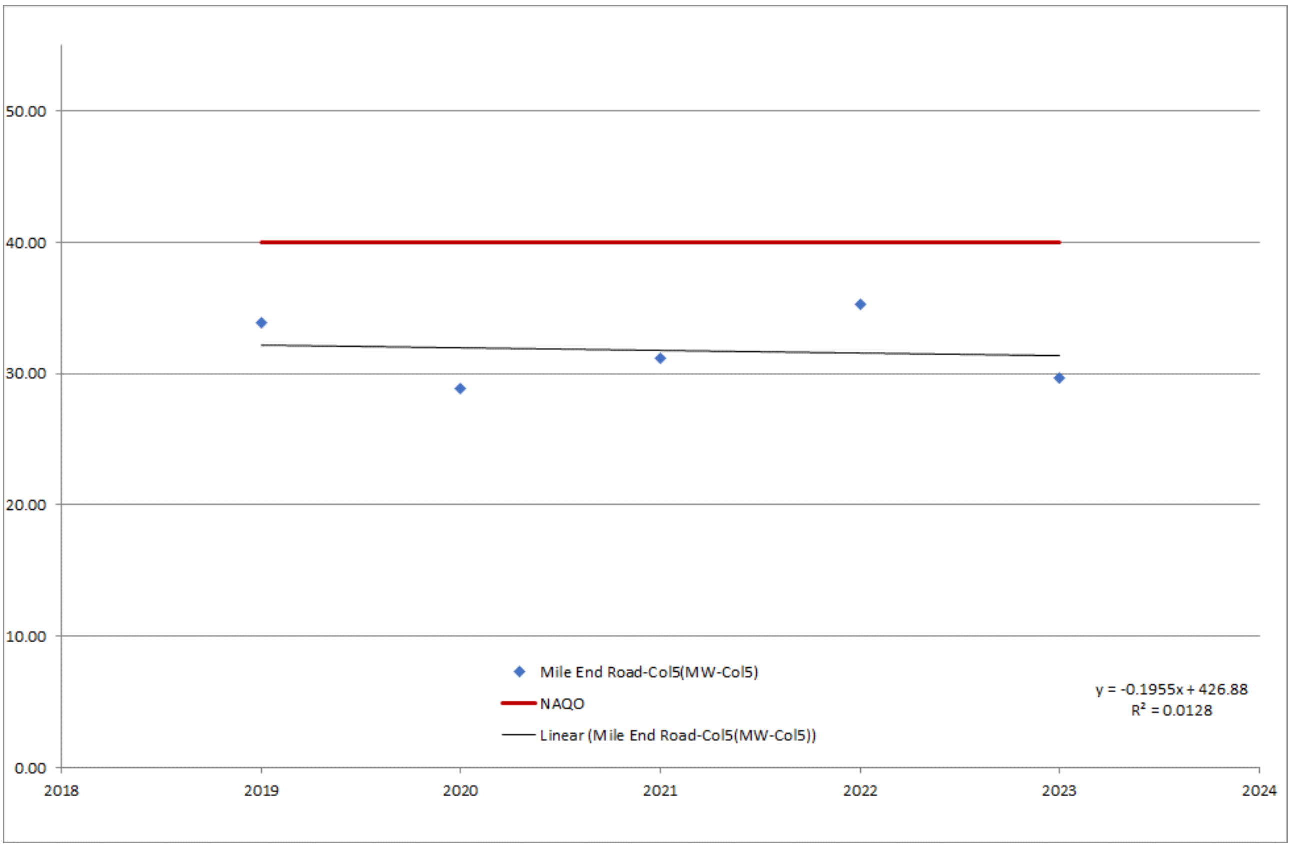


Figure F.42: Stamshaw Road (SR-W1)

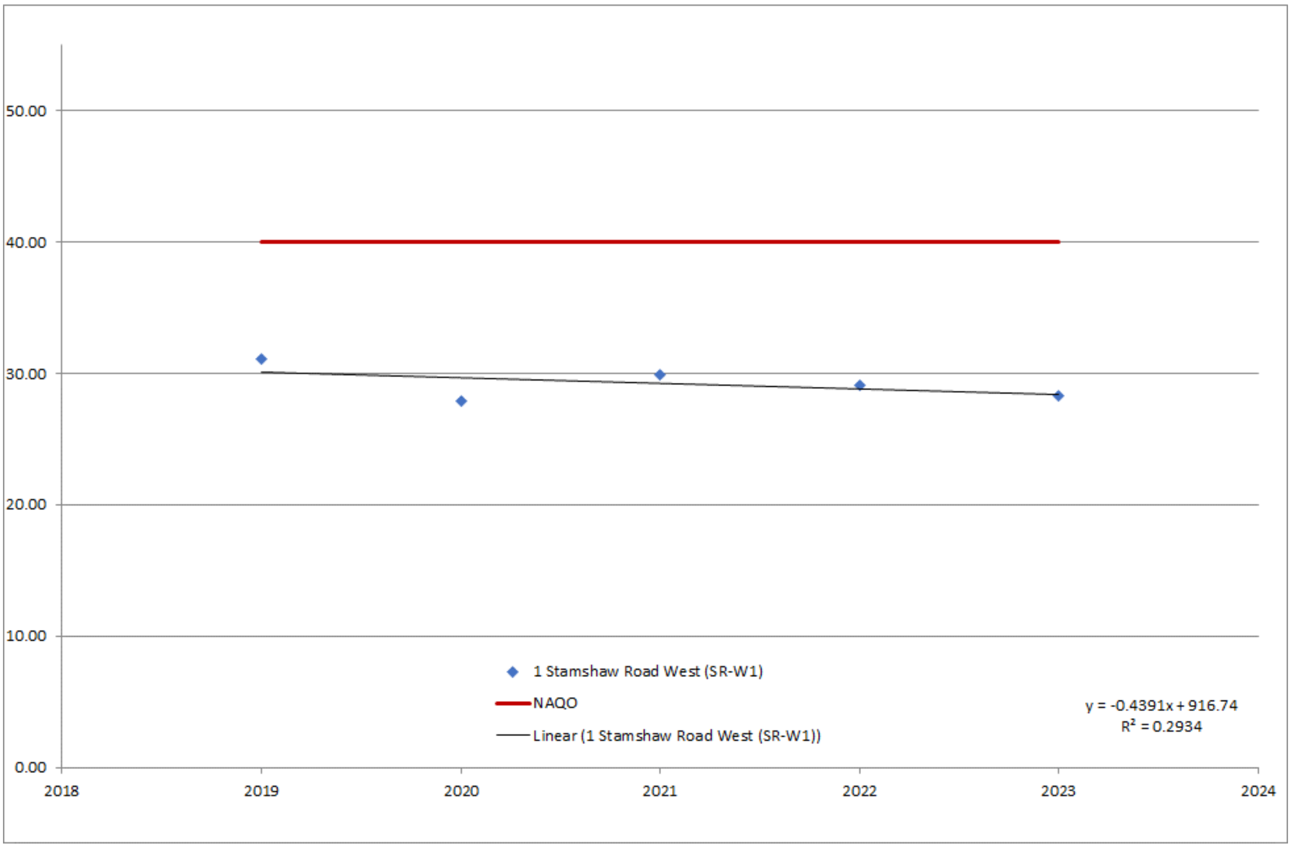


Figure F.43: 28 Stamshaw Road (SR-E28)

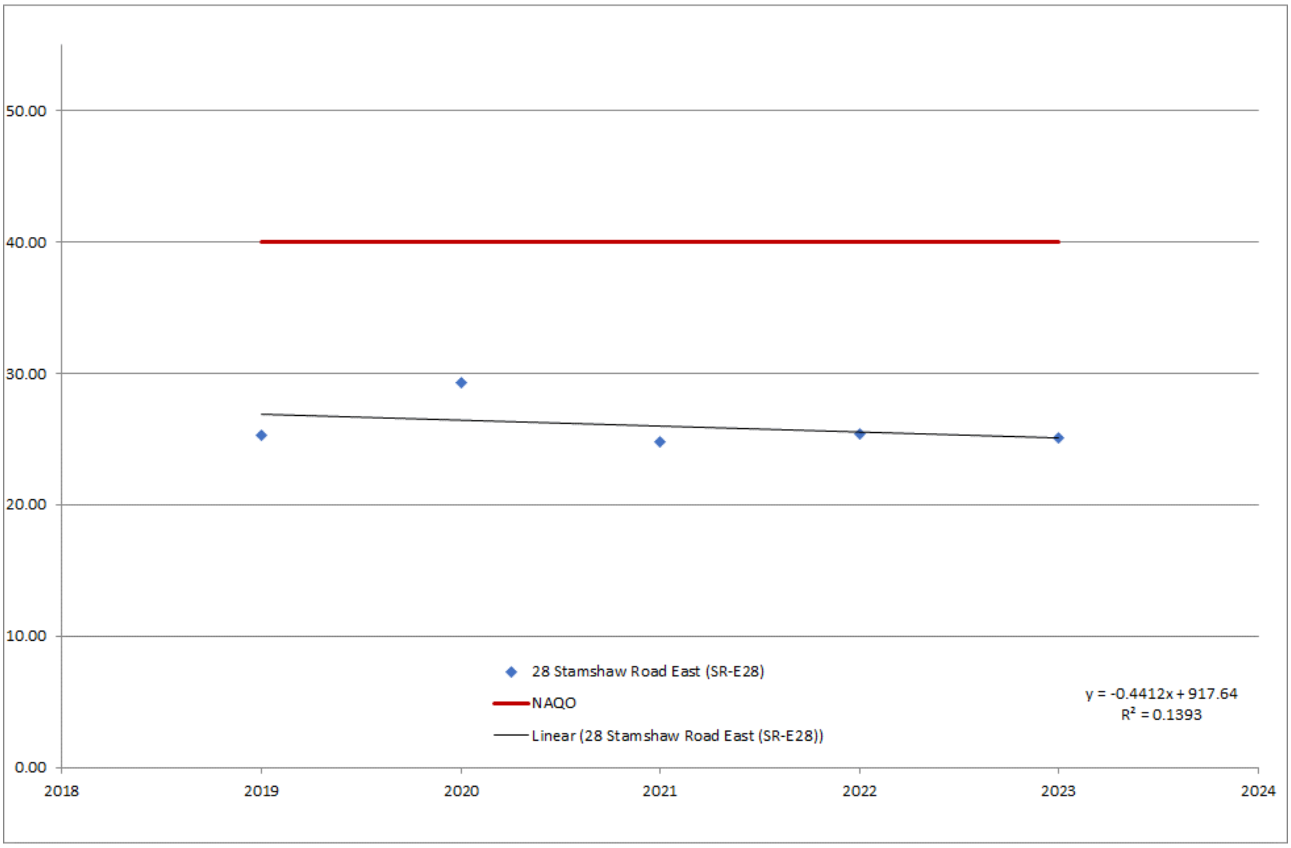


Figure F.44: Half Moon Street "The Ship and Castle" PH (HMS-S&CPH)

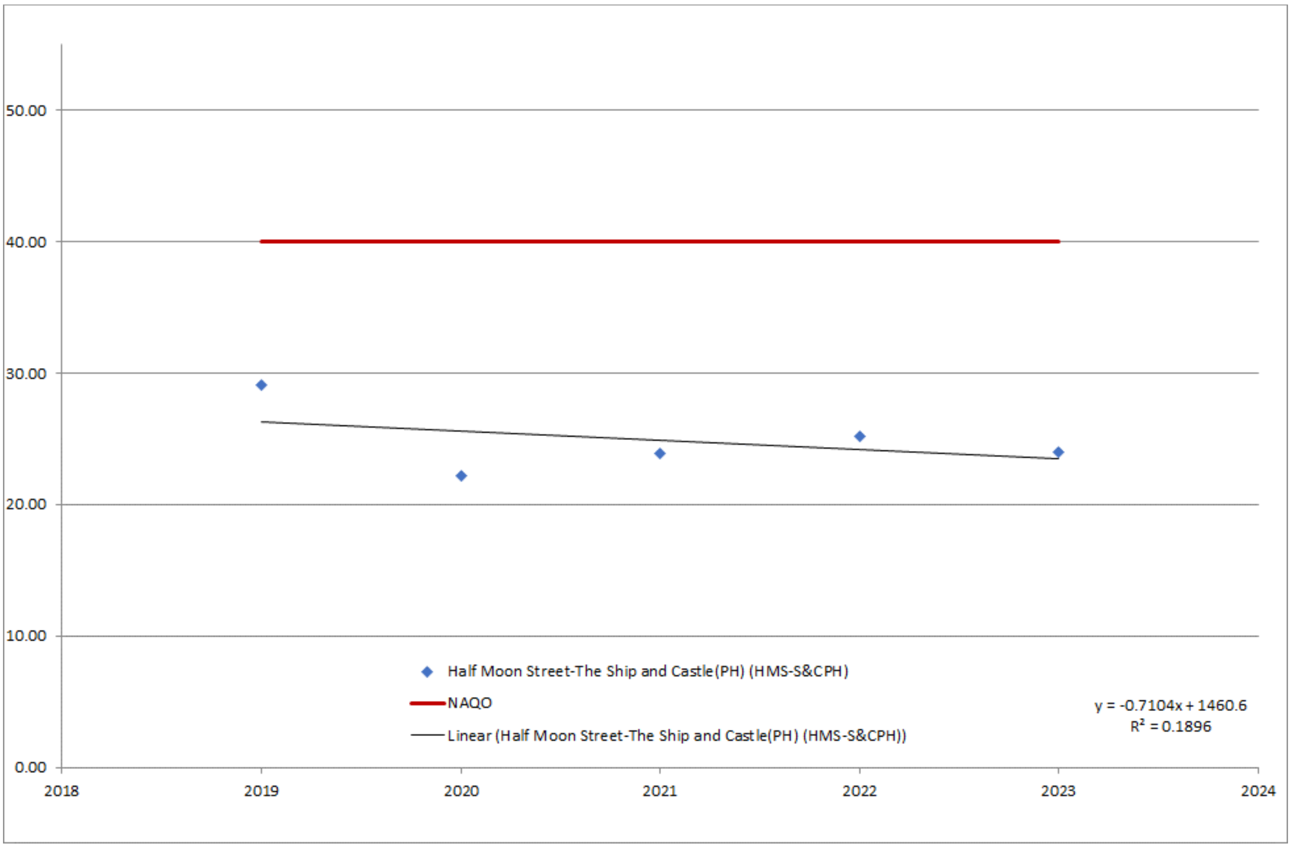


Figure F.45: 47 Queen Street (QS-47)

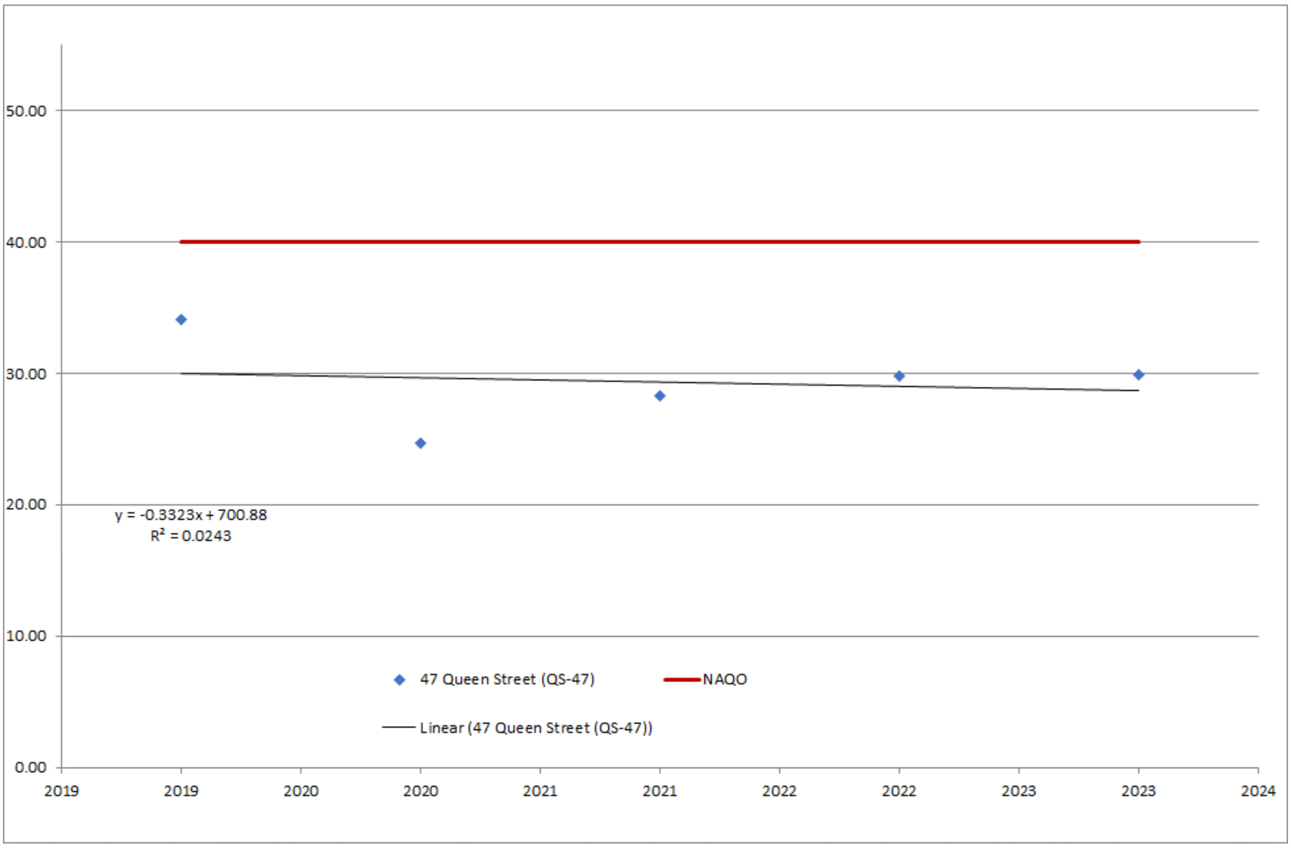


Figure F.46: 57 Queen Street (QS-57)

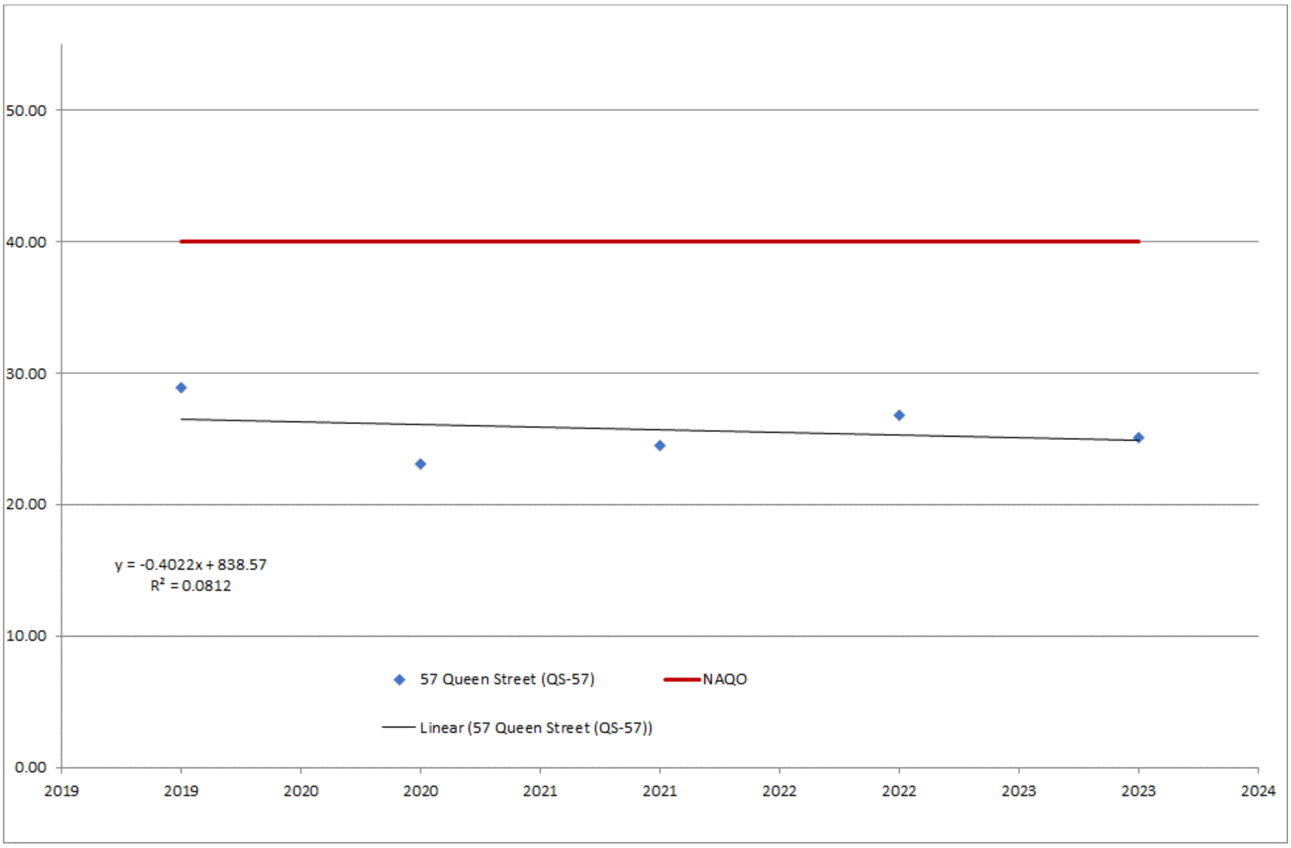


Figure F.47: Queen Street Column 29 (QS-Col29)

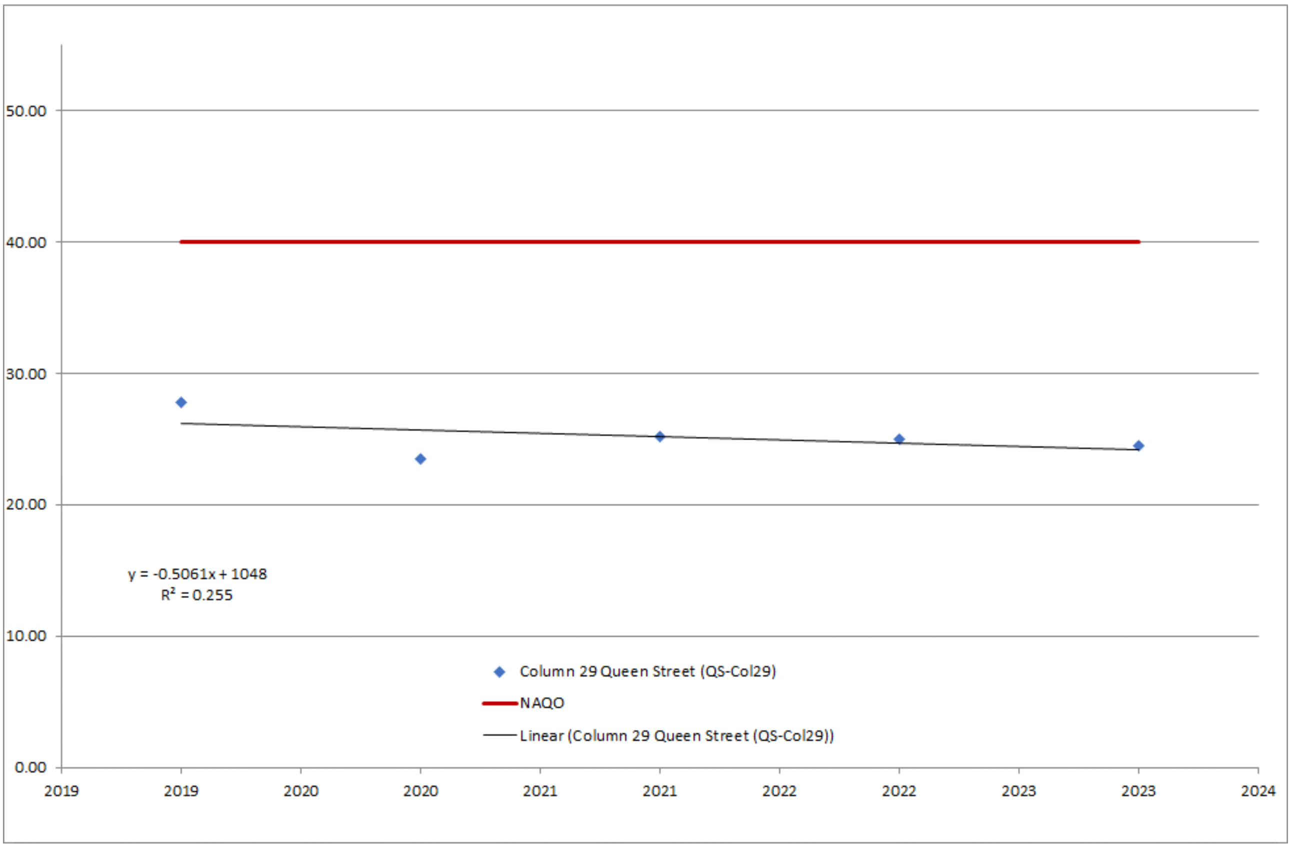


Figure F.48: Gunwharf Road Column 12 (GWR-Col12)

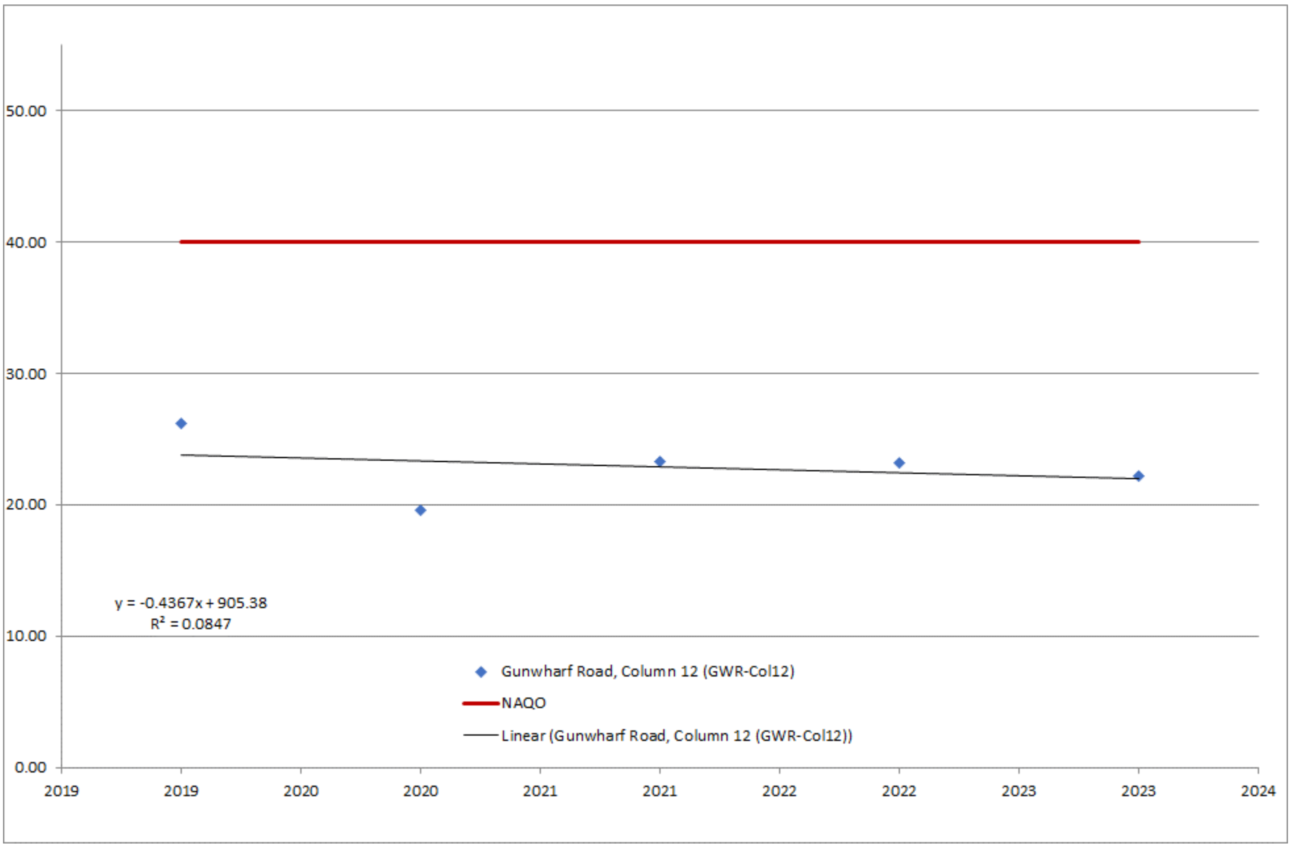


Figure F.49: Gunwharf Road Column 4 (GWR-Col4)

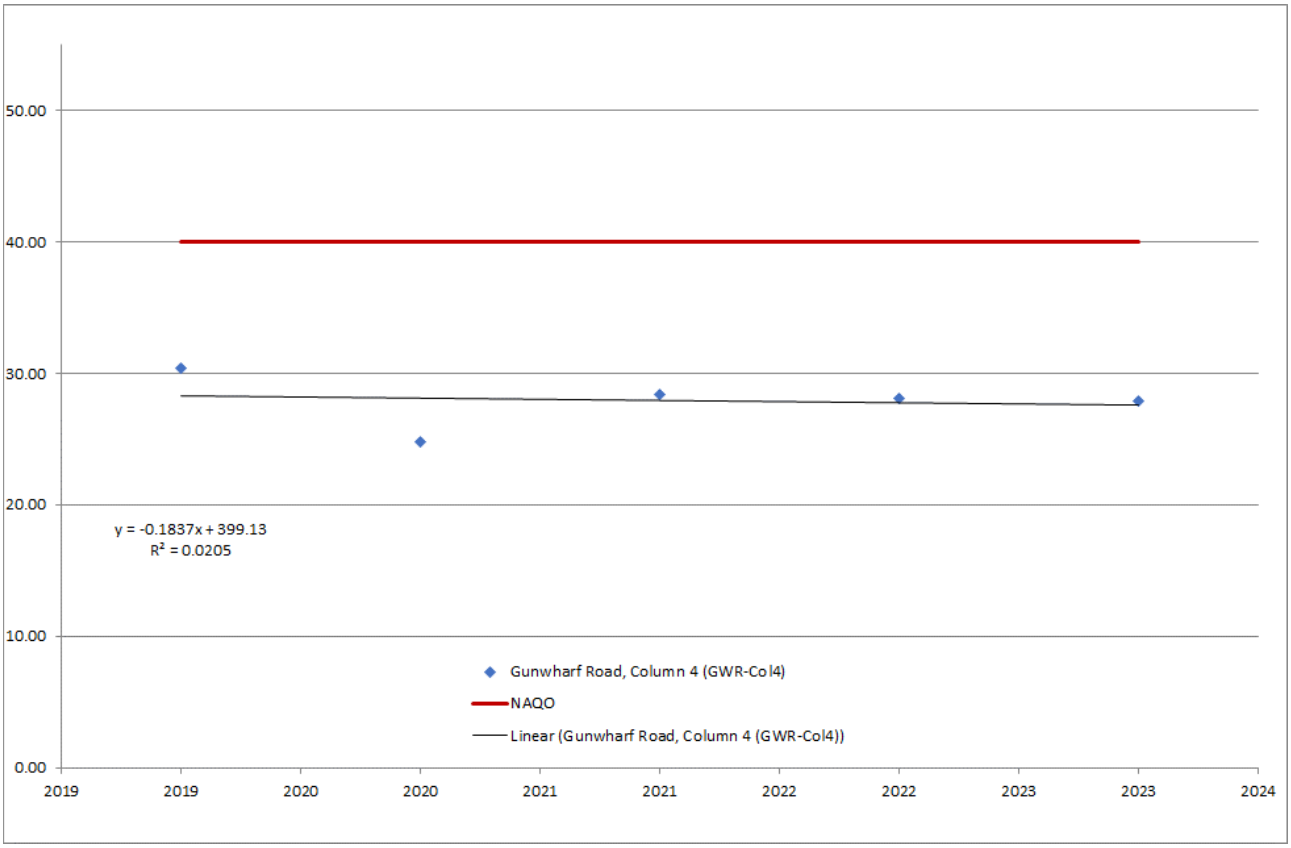


Figure F.50: 9 St George Road (StGS-9)

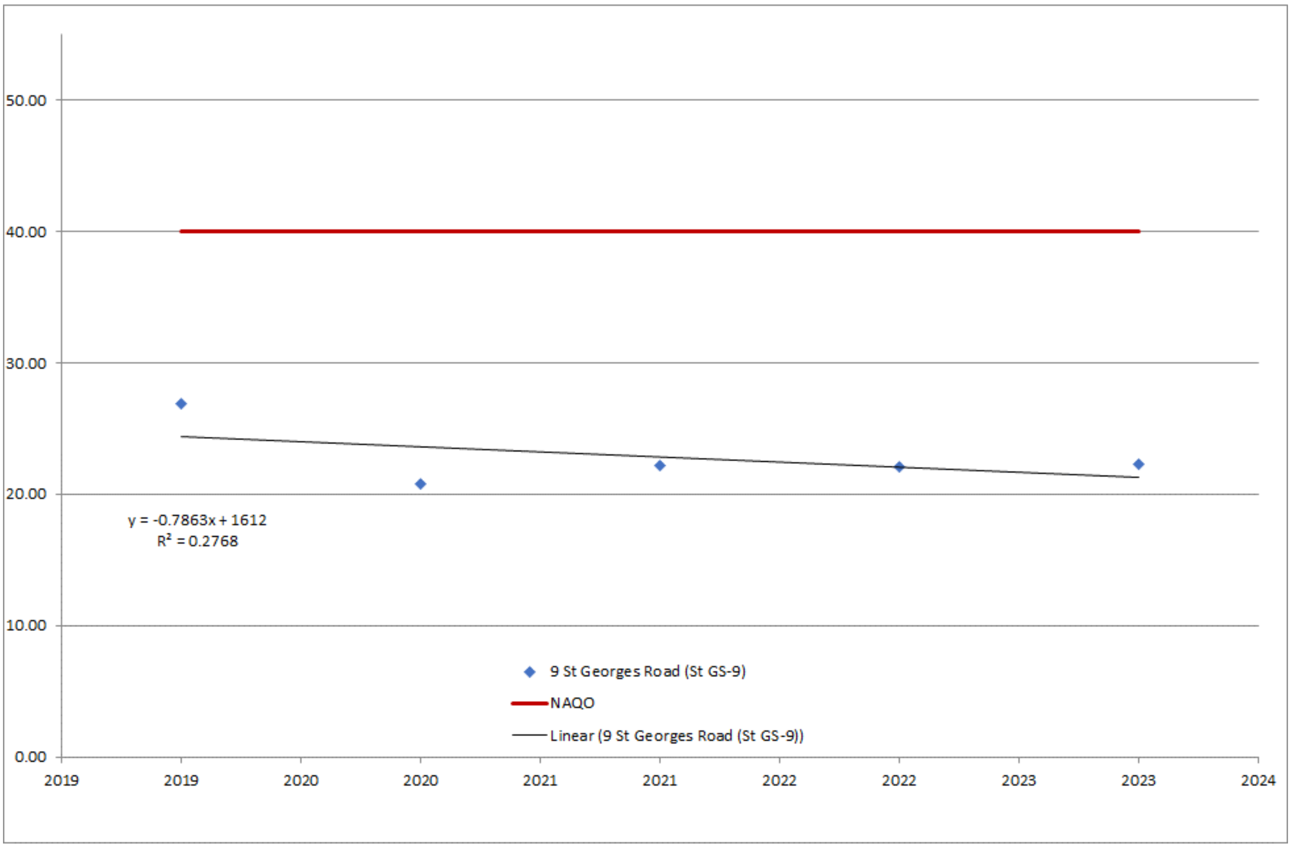


Figure F.51: Milton RoadColumn 41 (MR-Col41)

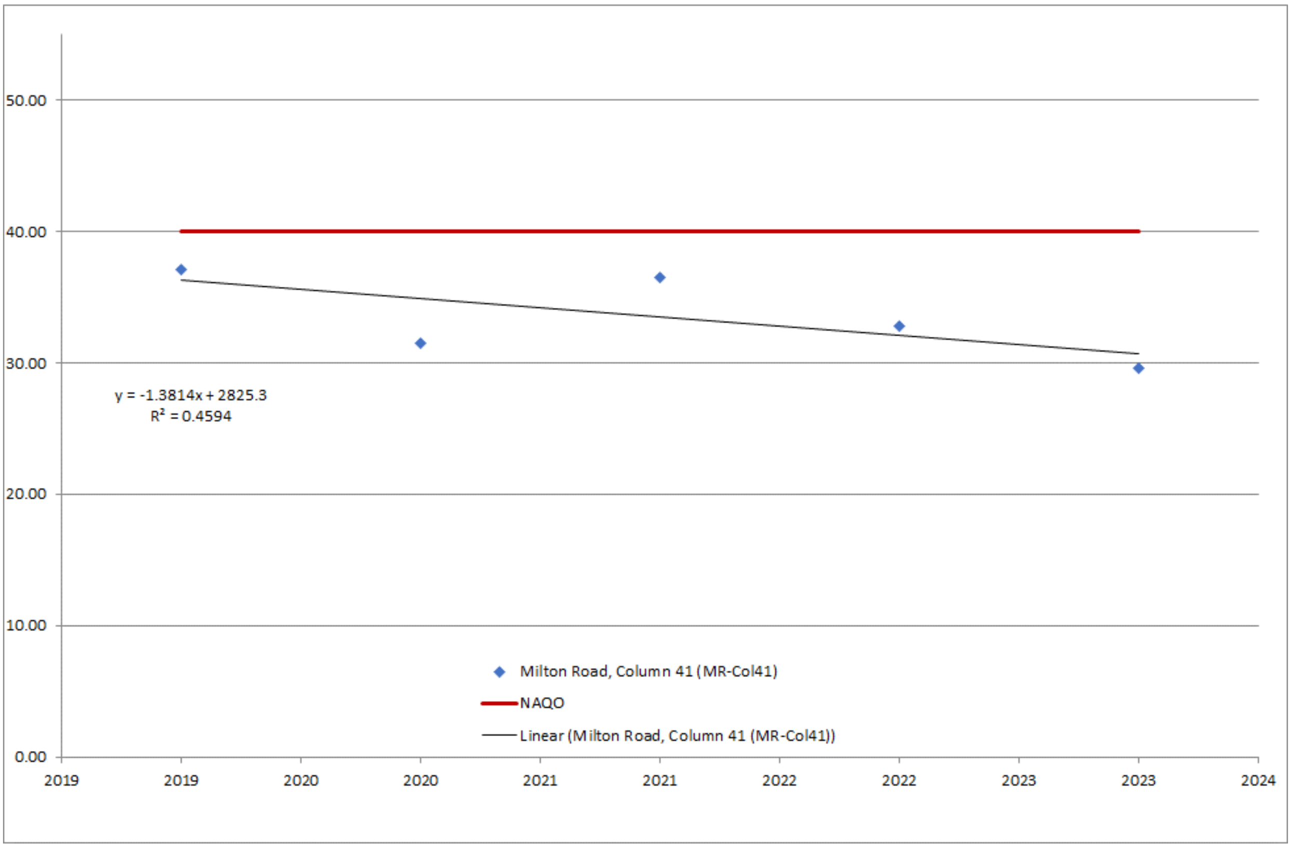


Figure F.52: Milton Road Column 42 (MR-Col42)

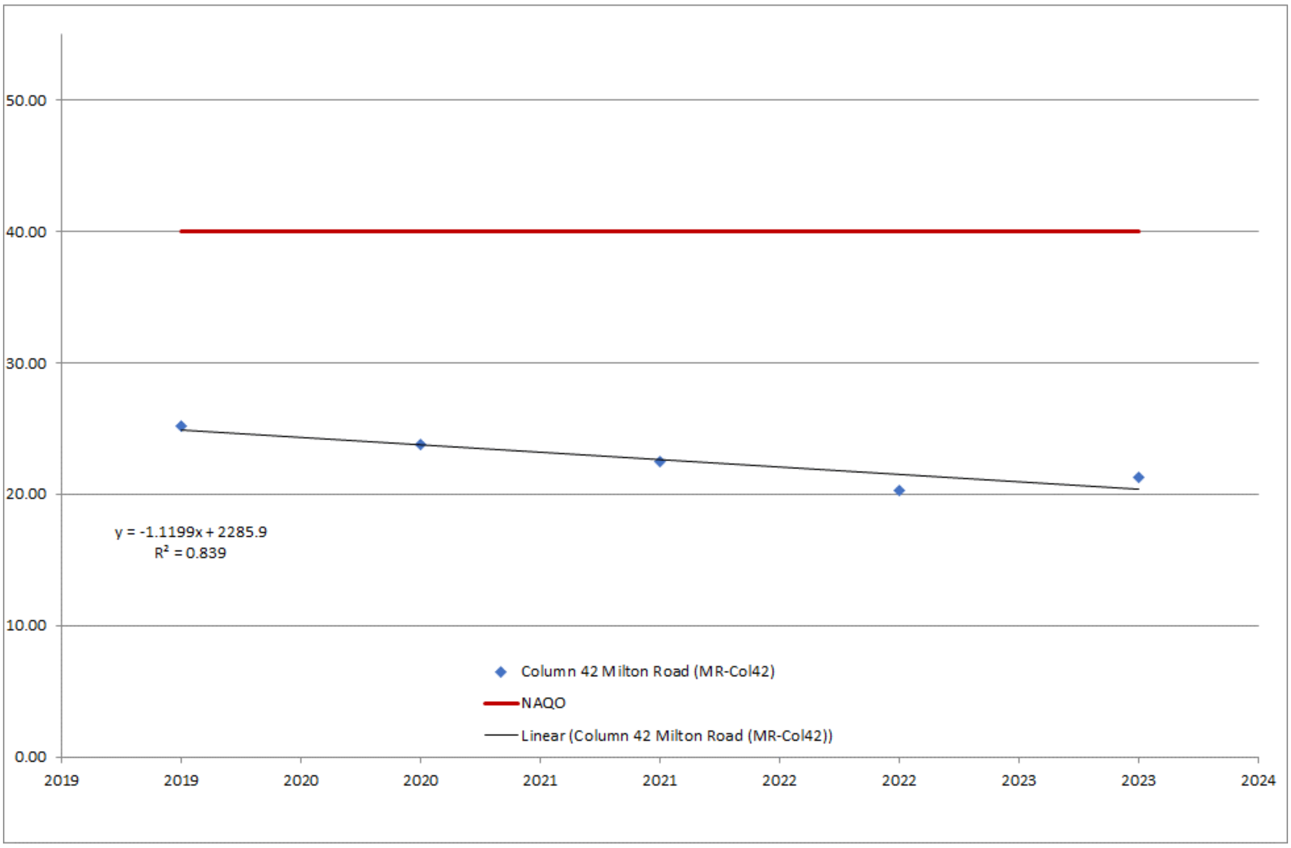


Figure F.53: Milton Road (MR-SH)

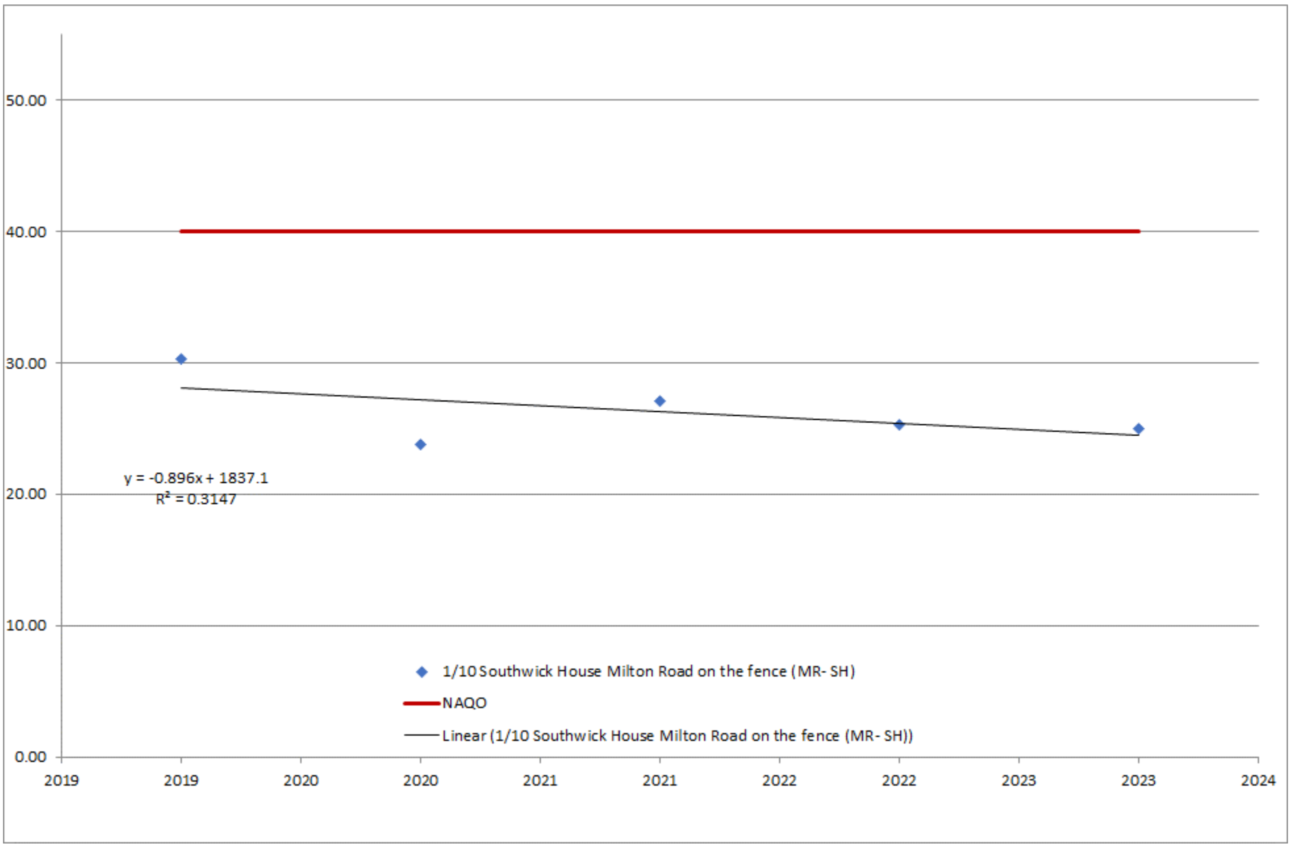


Figure F.54: Milton Road (MR-HH)

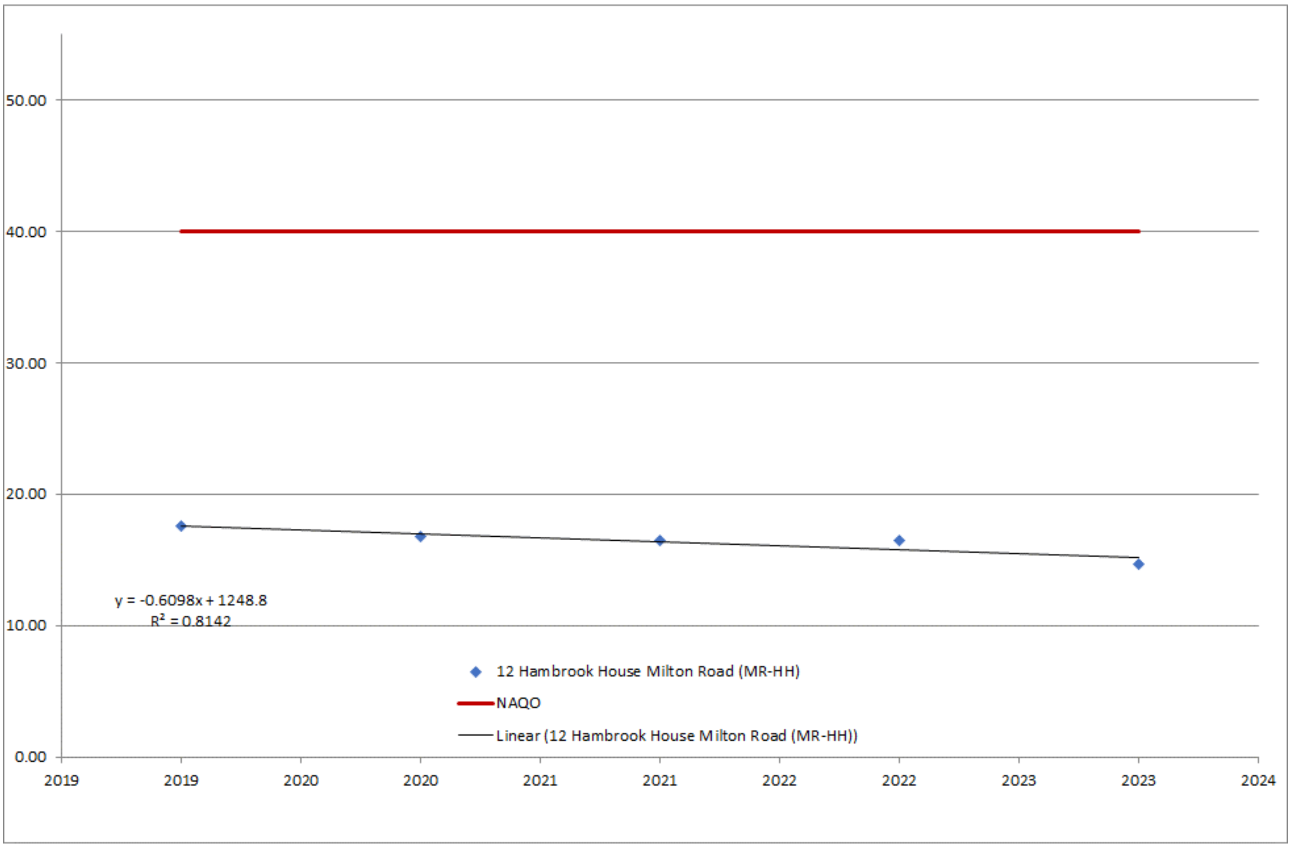


Figure F.55: 209 Milton Road (MR-209)

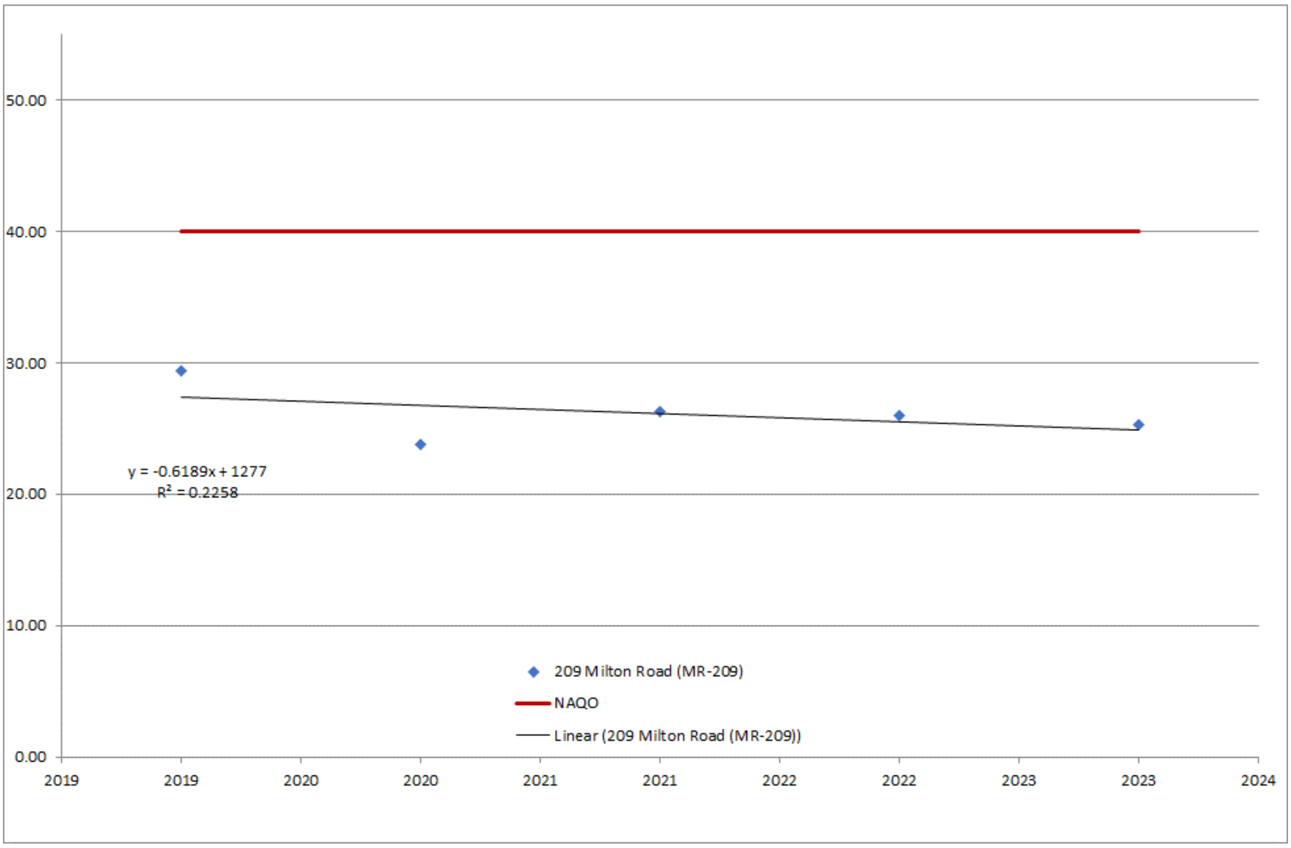


Figure F.56: Milton RoadSummers Lodge (MR-SL)

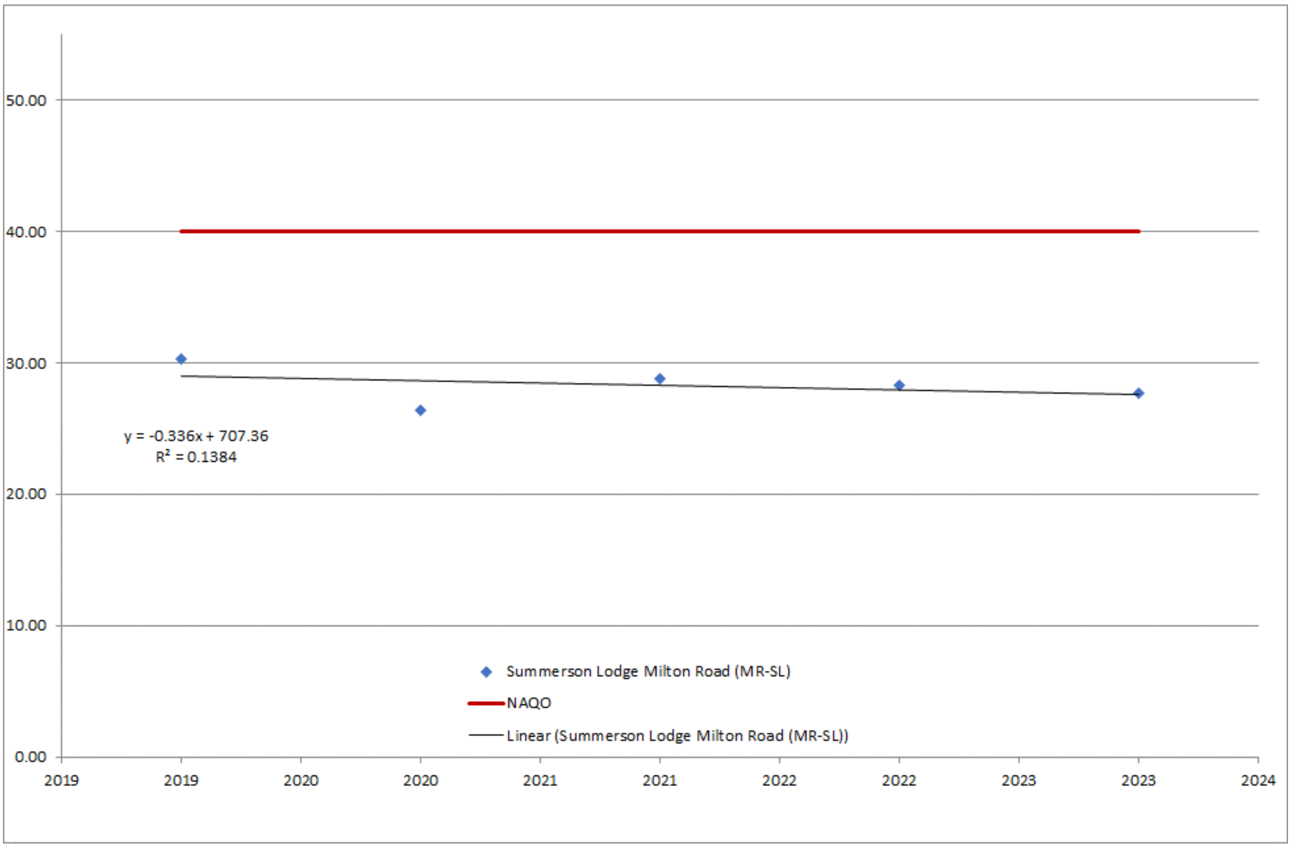


Figure F.57: 12 Mooring Way (MW-12)

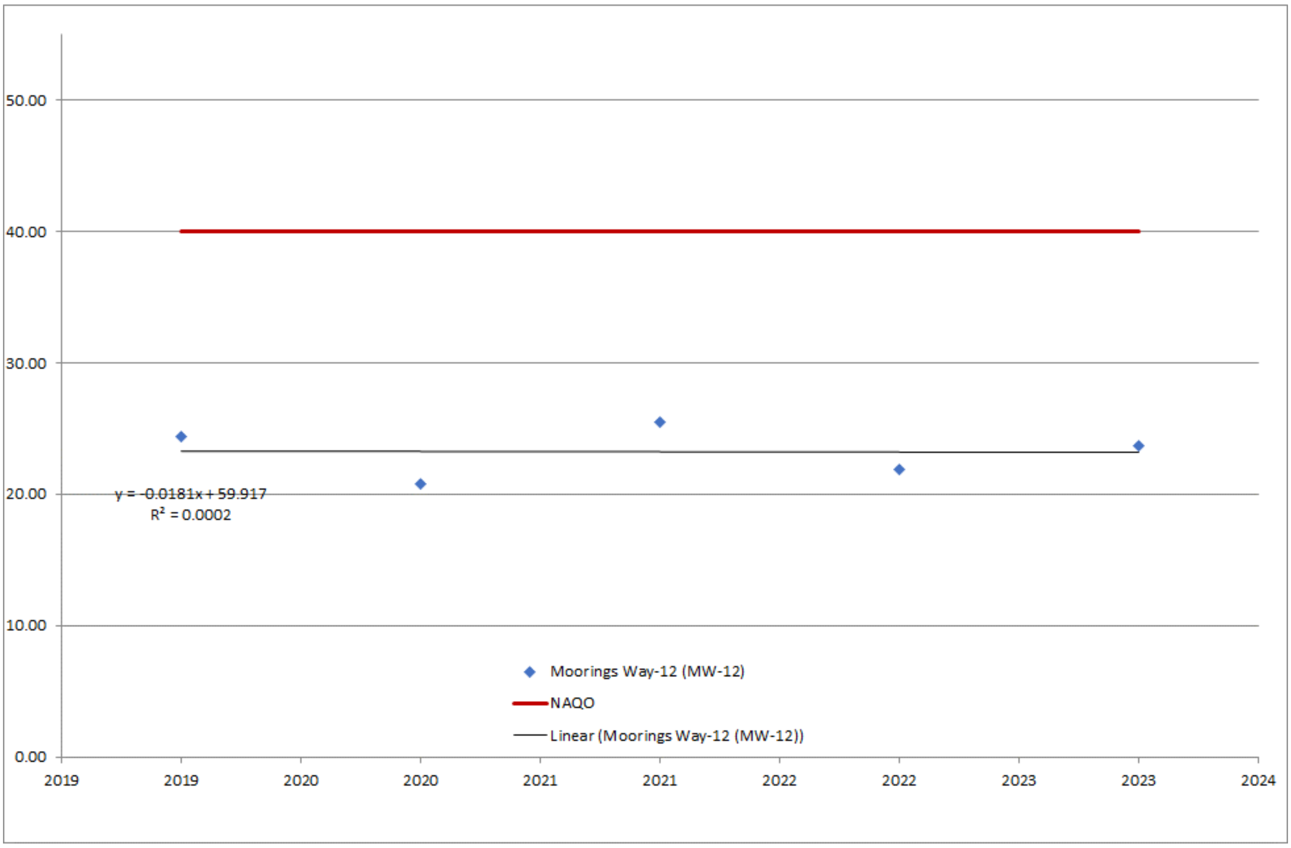


Figure F.58: 1 Velder Avenue (VA-1)

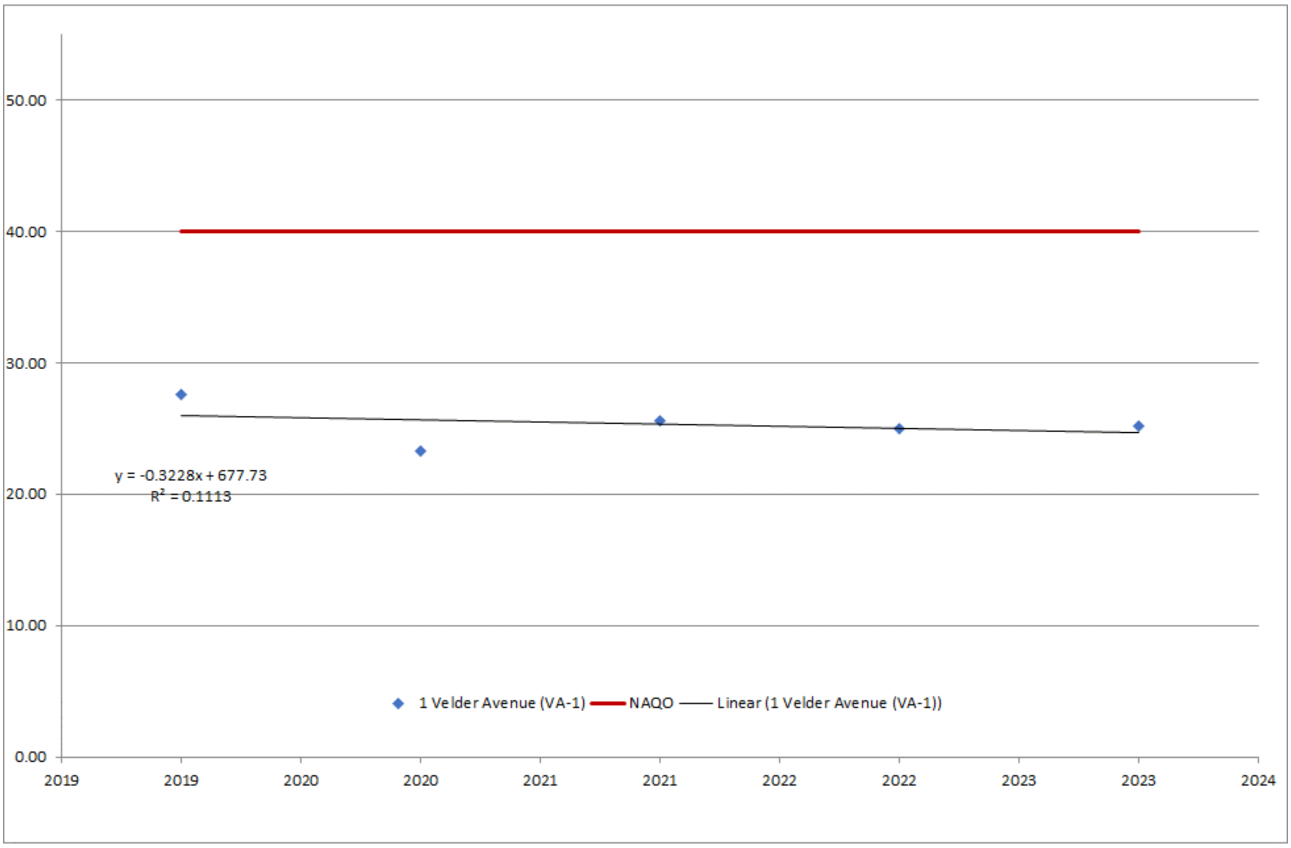


Figure F.59: 23 Velder Avenue (VA-23)

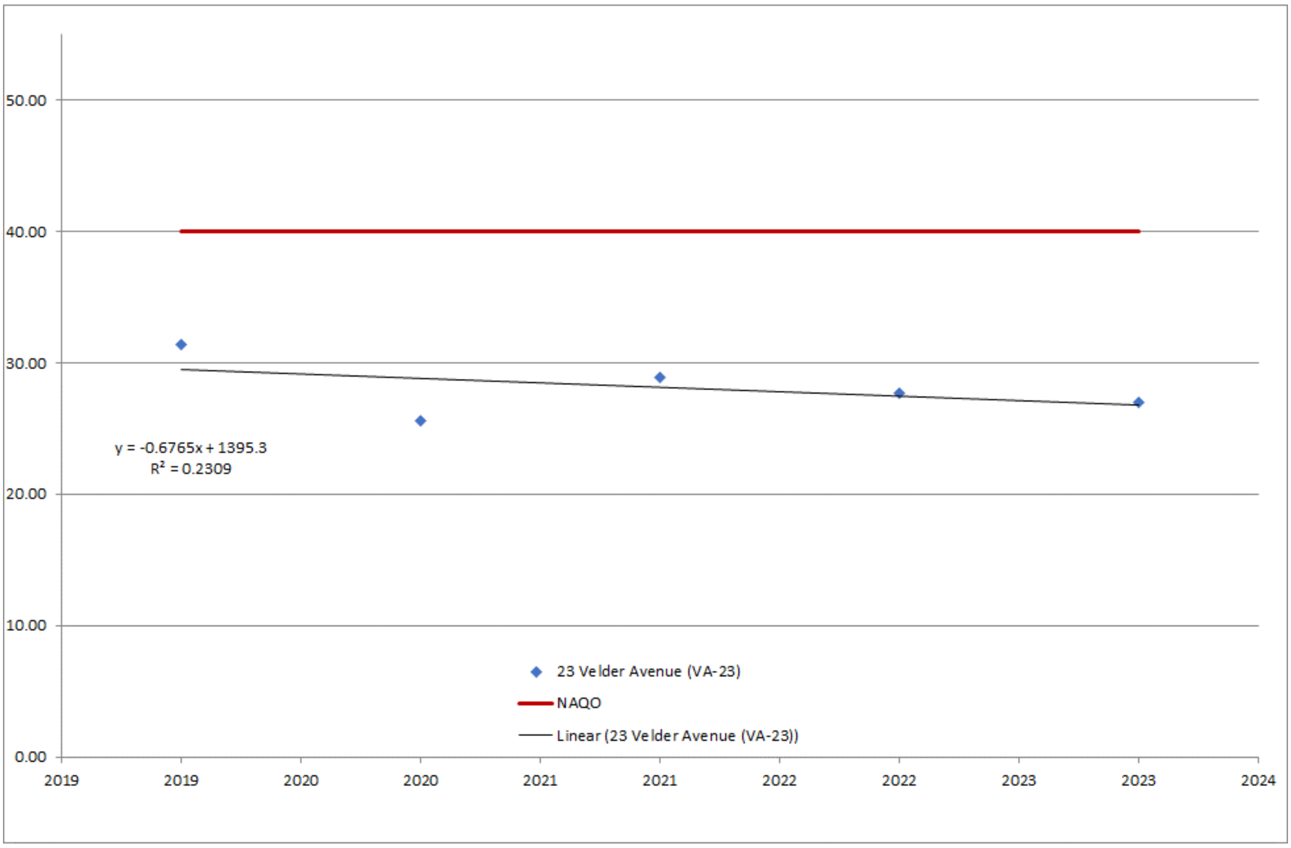


Figure F.60: 36 Velder Avenue (VA-36)

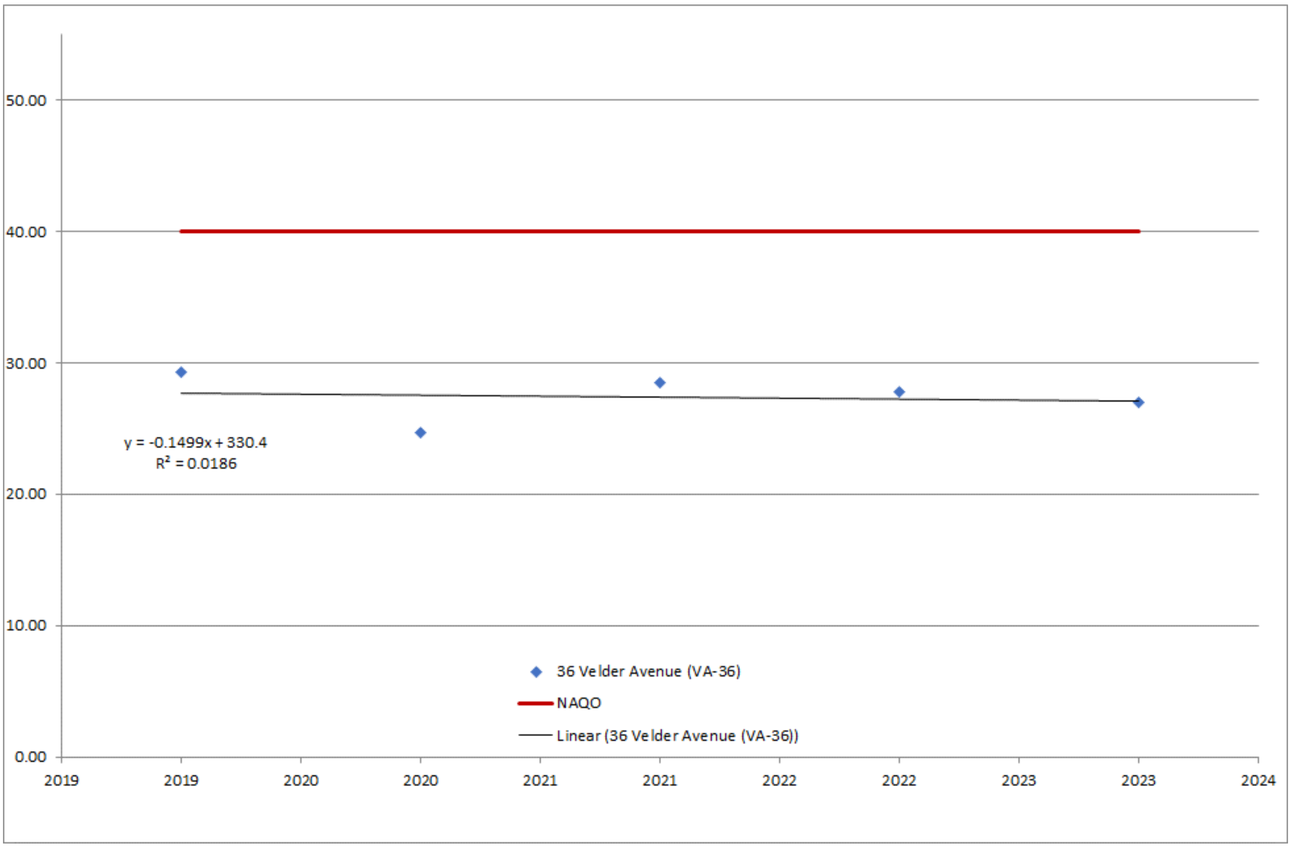


Figure F.61: Velder Avenue Column 4 (VA-Col4)

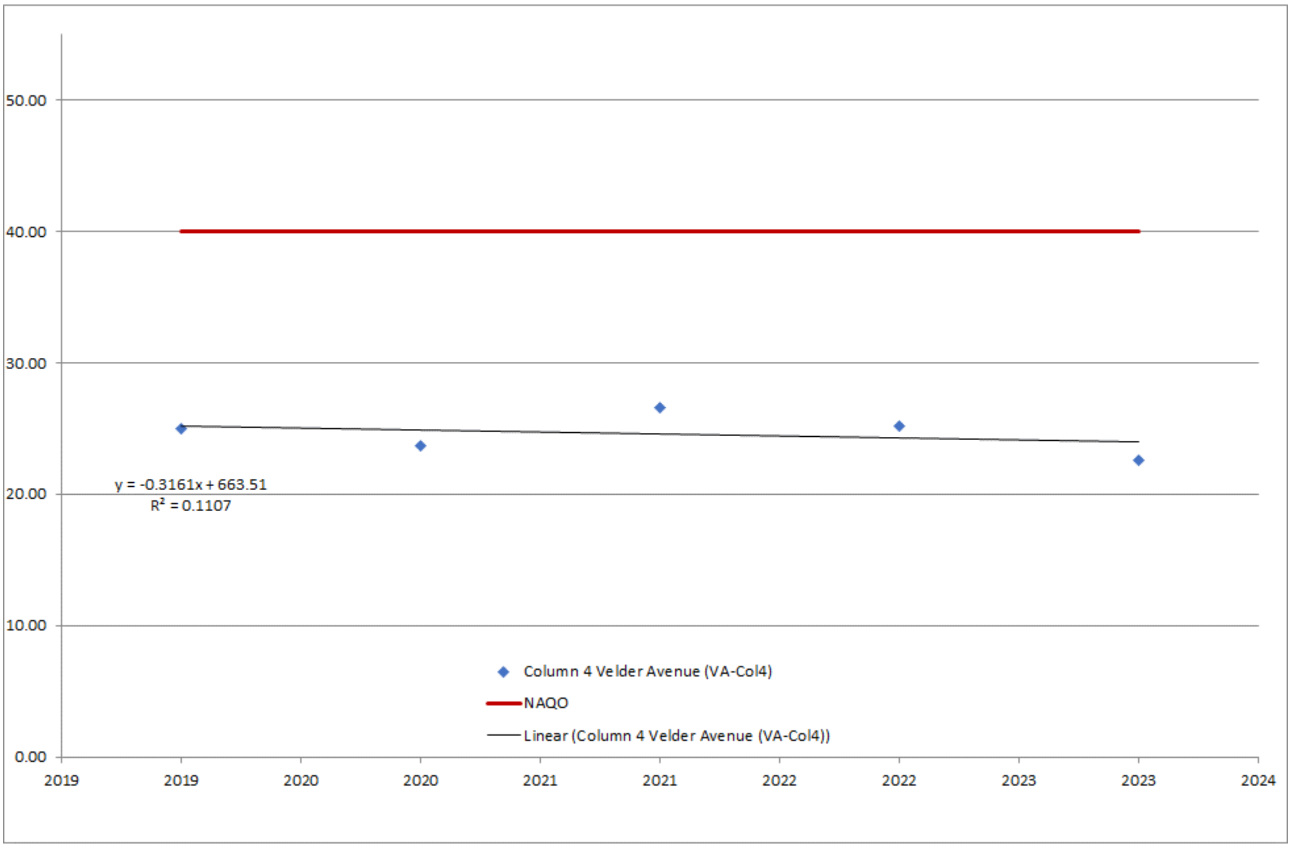


Figure F.62: Eastney Road Milton Primary School (ER-DS)

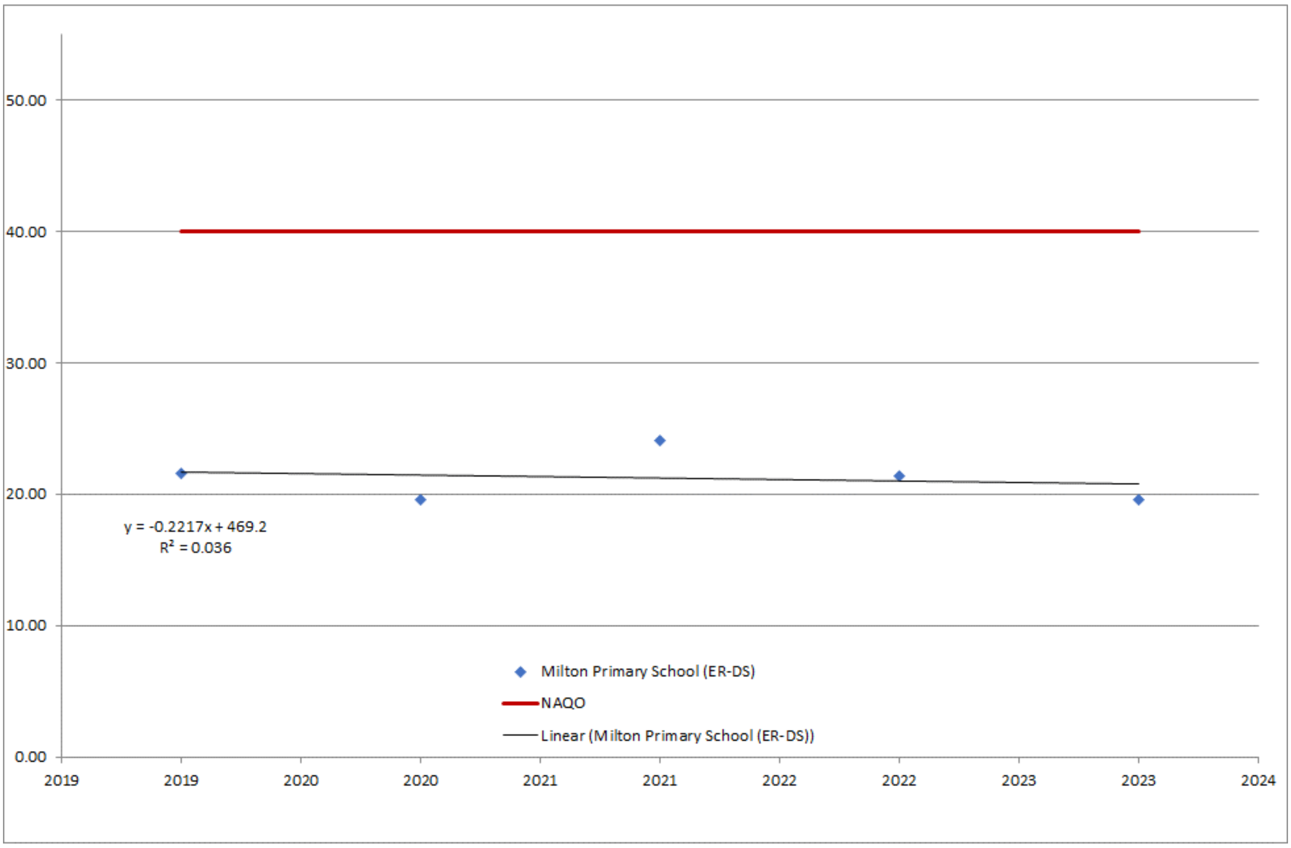


Figure F.63: 19 Havant Road (HR-19)

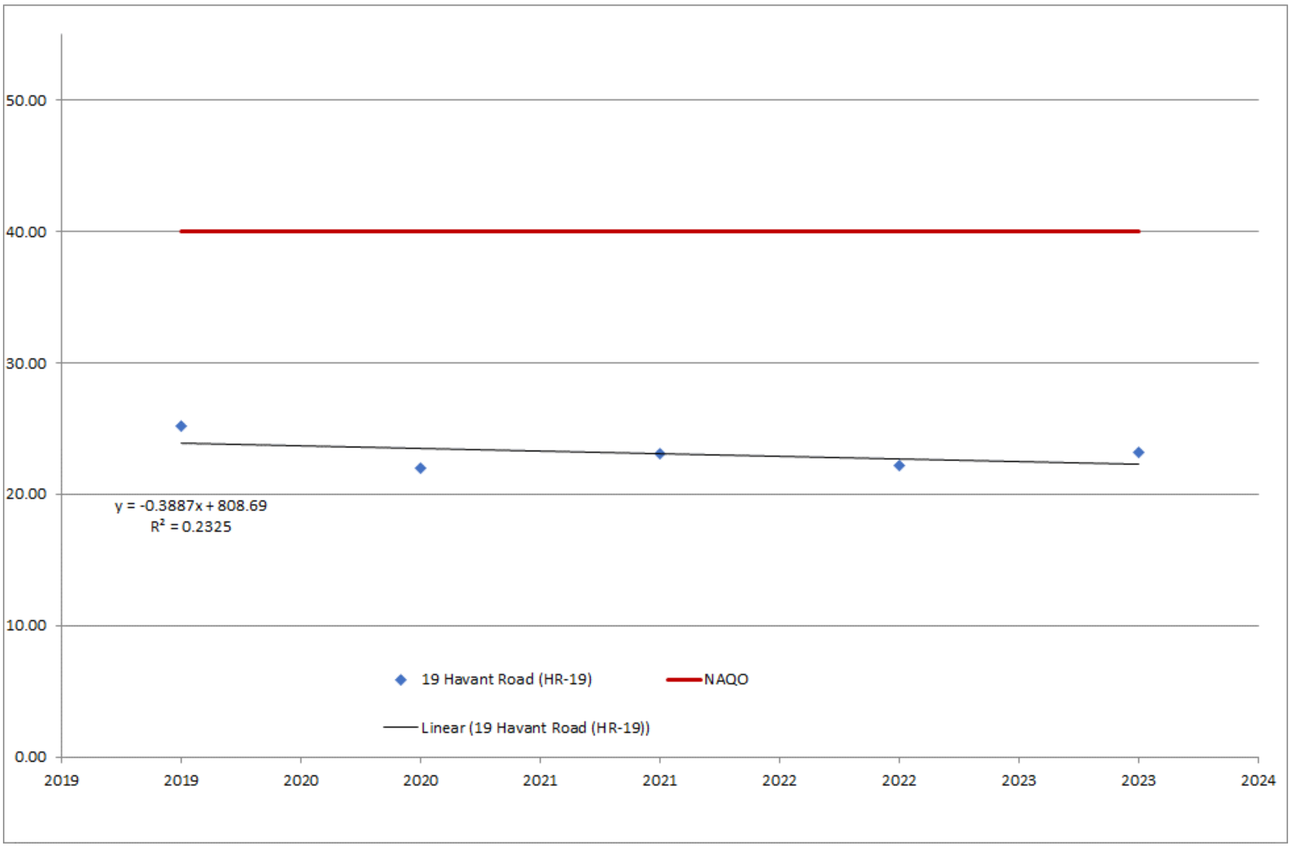


Figure F.64: 60 Northern Road (NR-60)

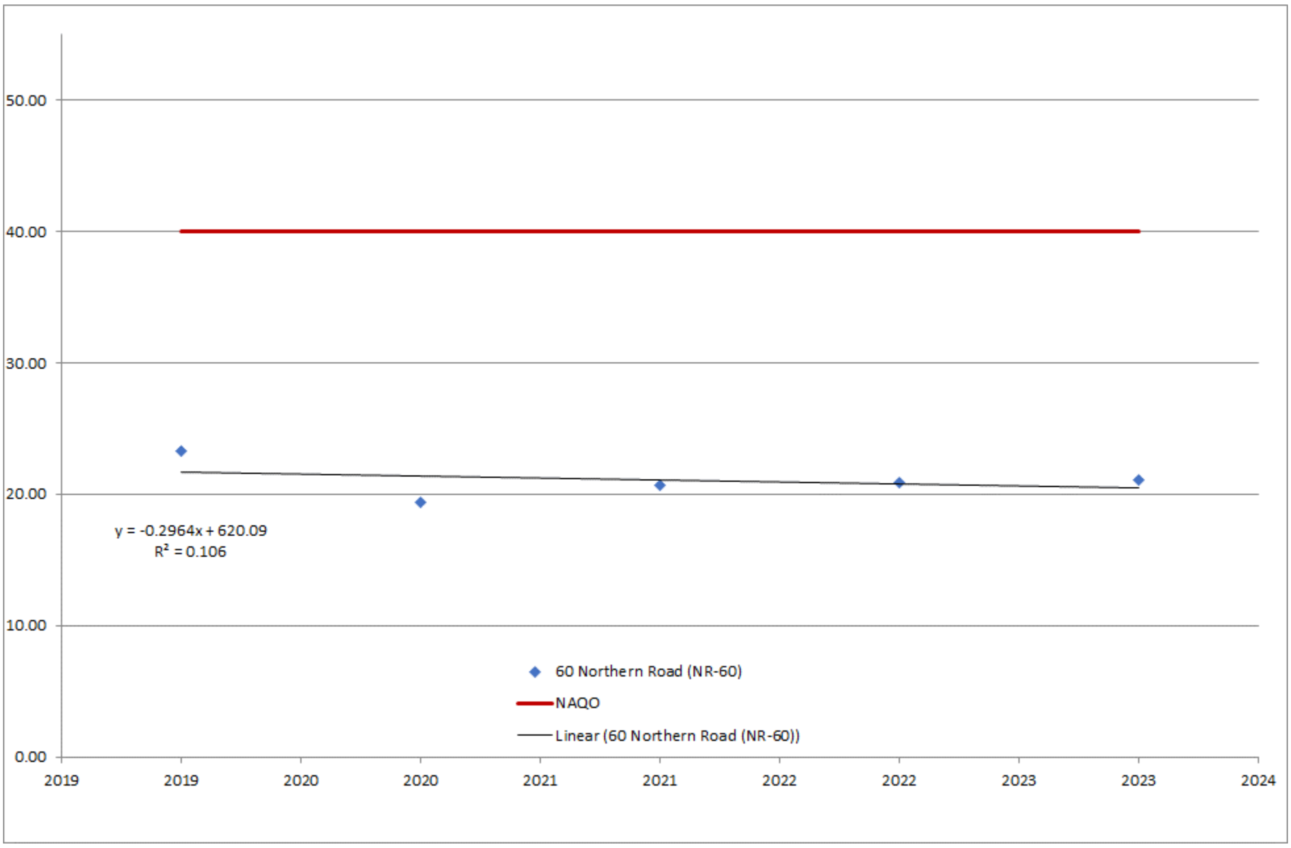


Figure F.65: 52 Northern Road (NR-52/54)

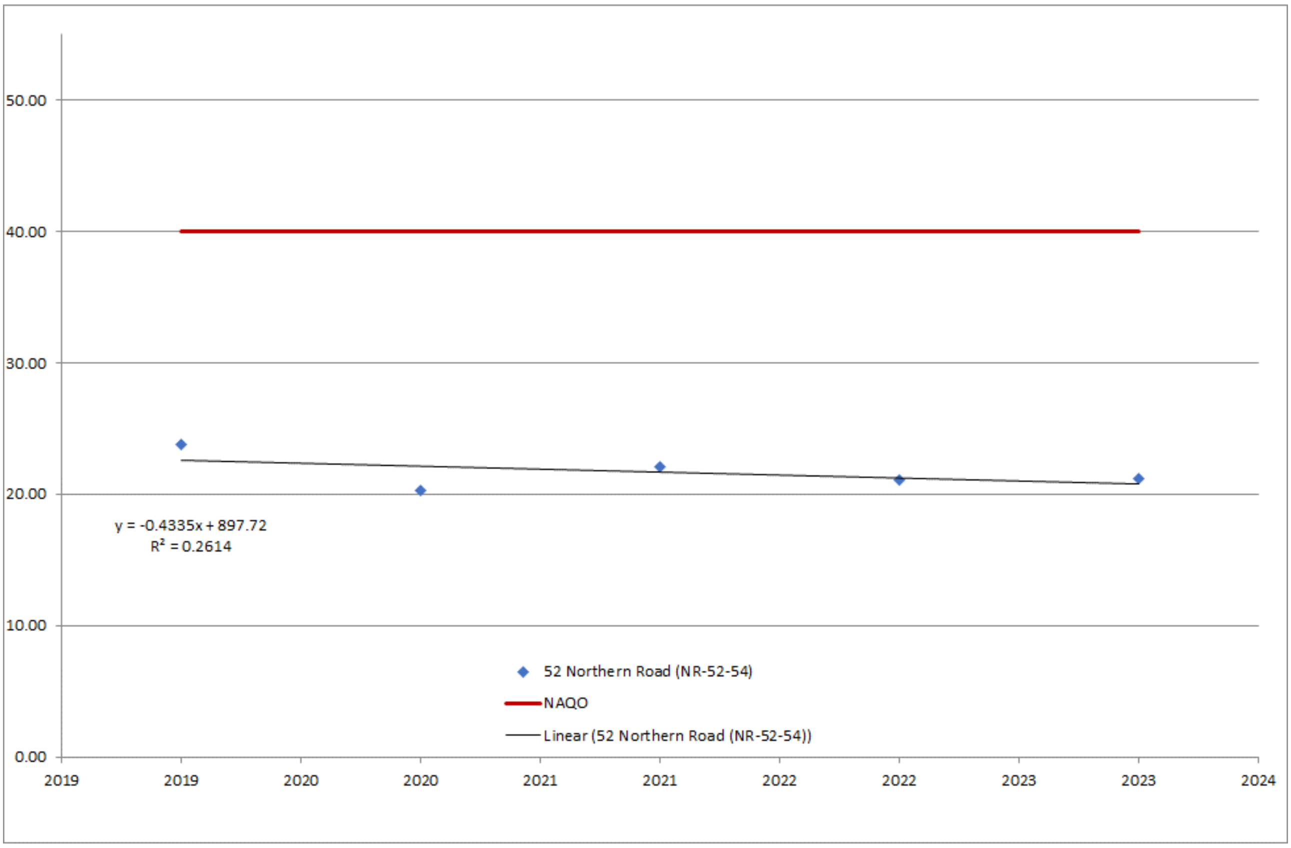


Figure F.66: Northern Road Column 38 (NR-Col38)

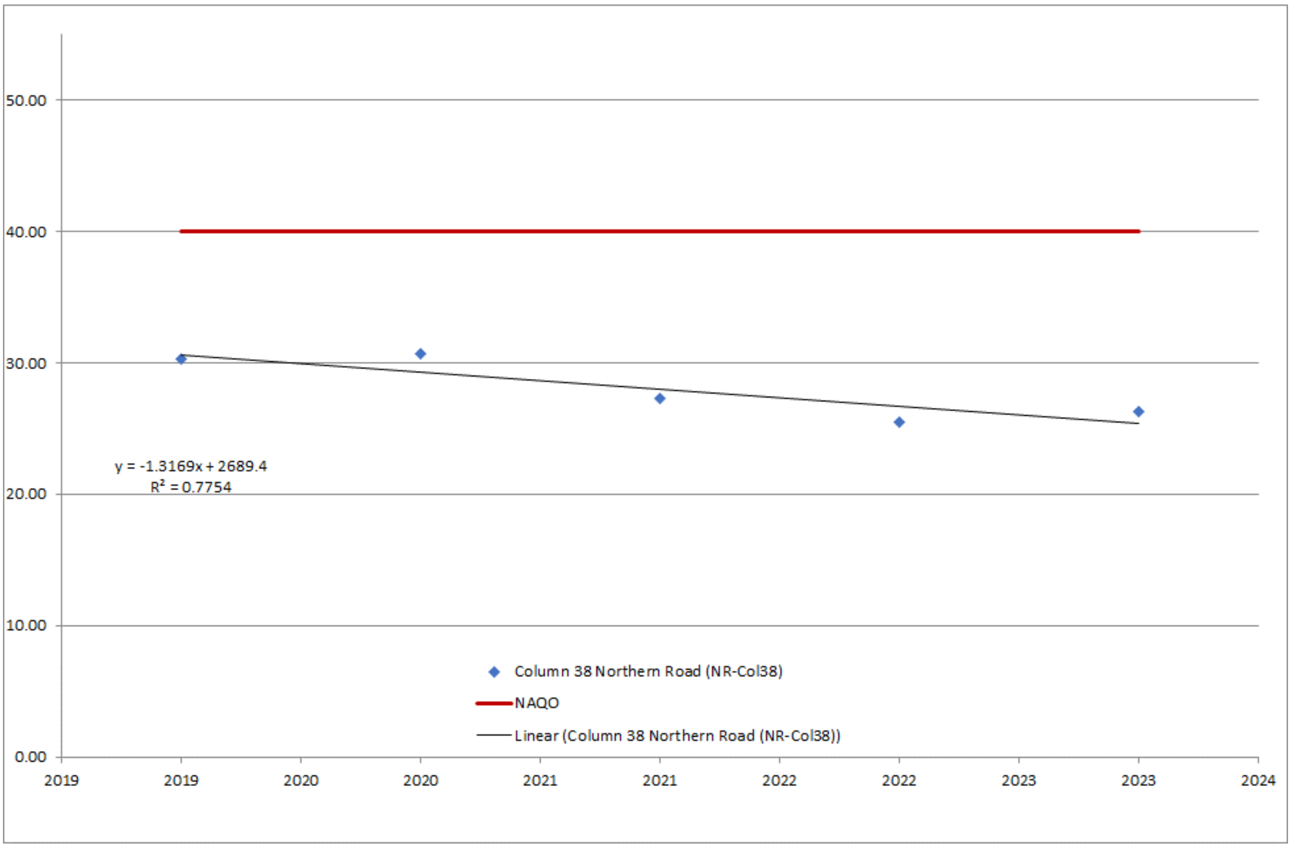


Figure F.67: 1-6 Southampton Road Chipstead House (SR-CH)

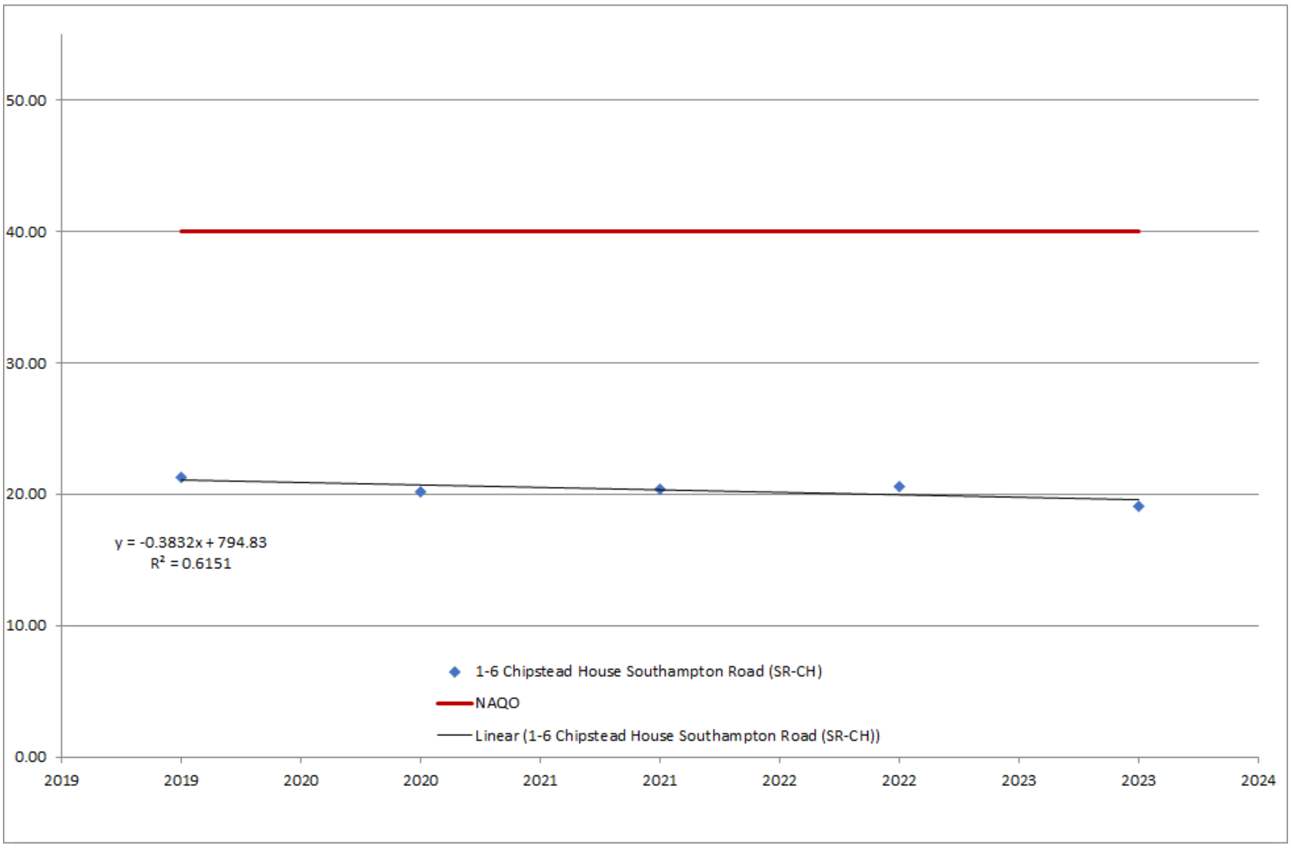


Figure F.68: 142 Copnor Road (CR-142)

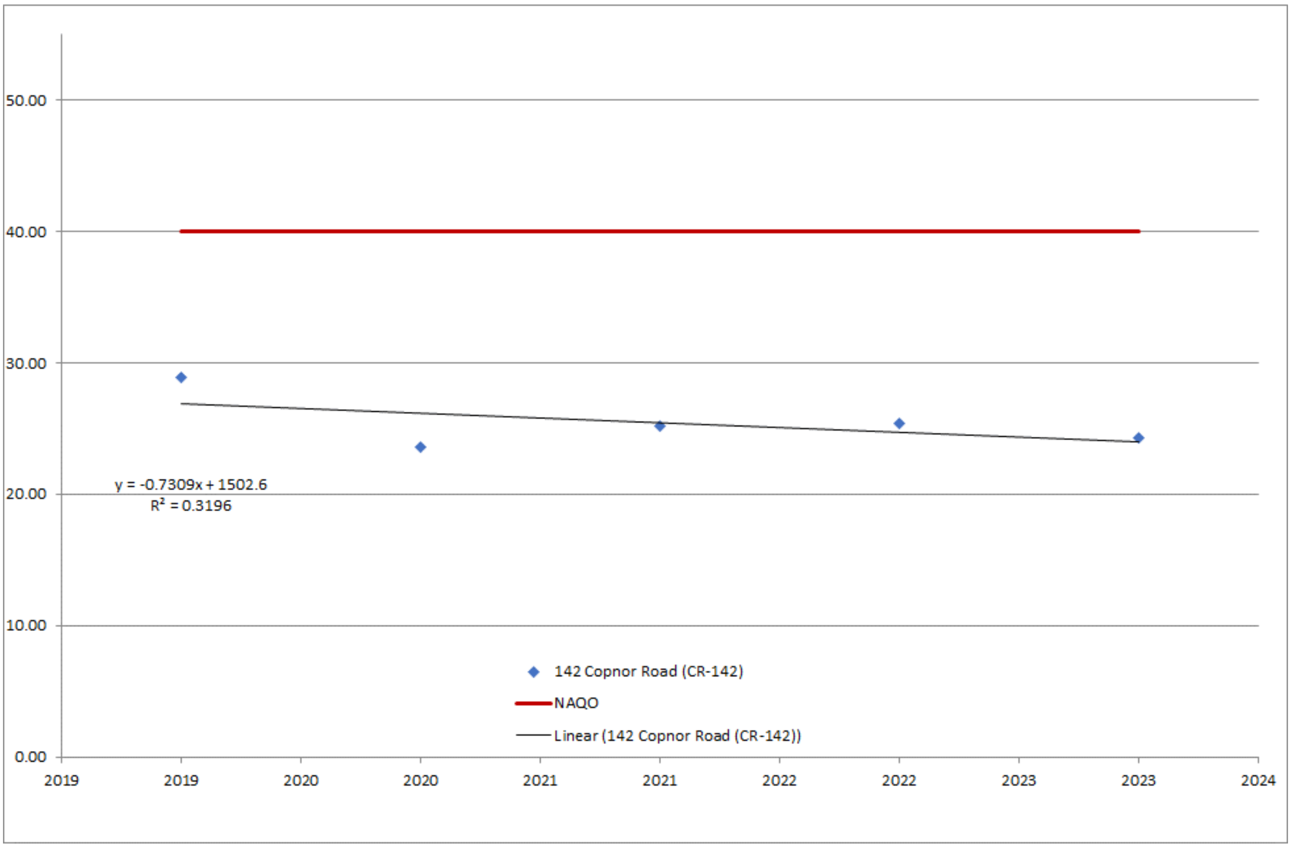


Figure F.69: Copnor Road Copnor School (CR-School)

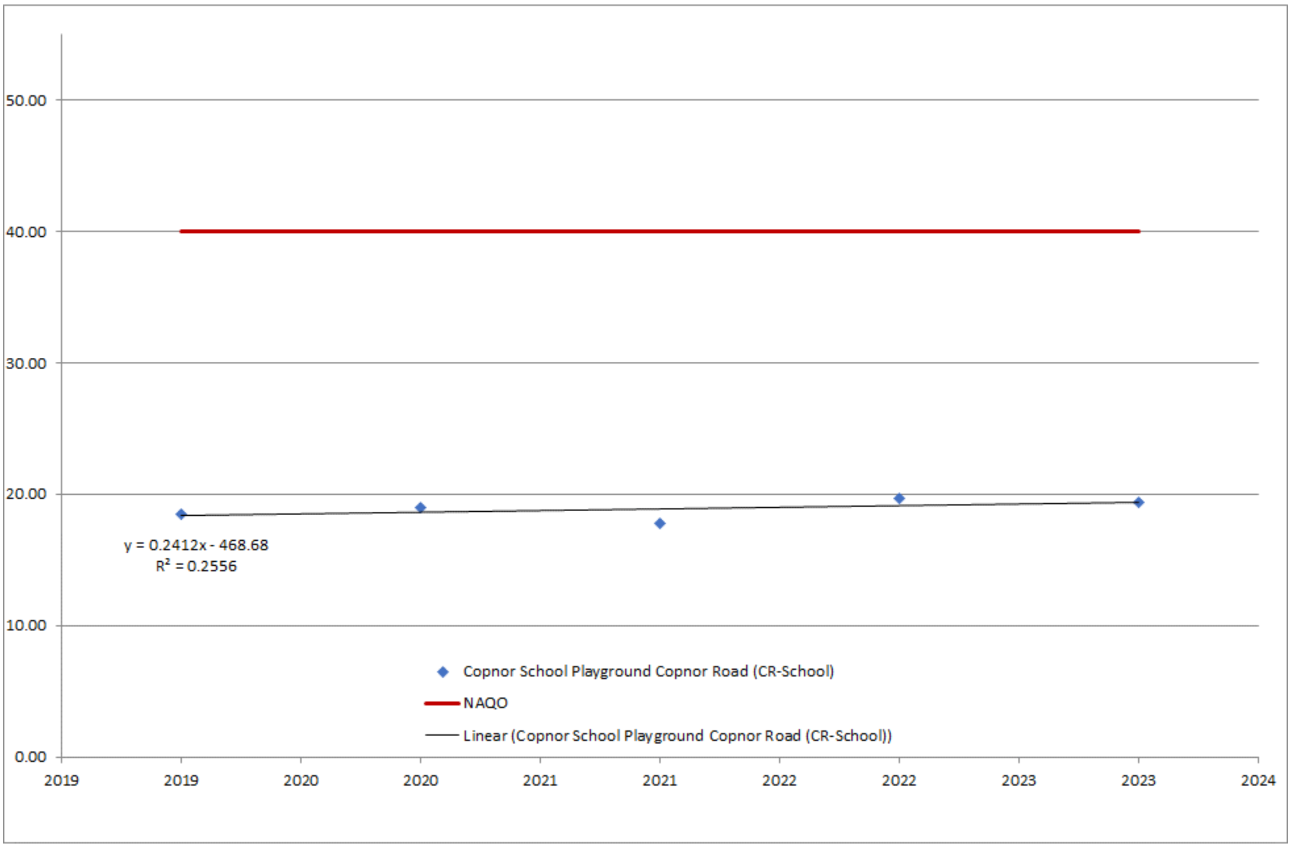


Figure F.70: 3 Goldsmith Avenue (GA-3)

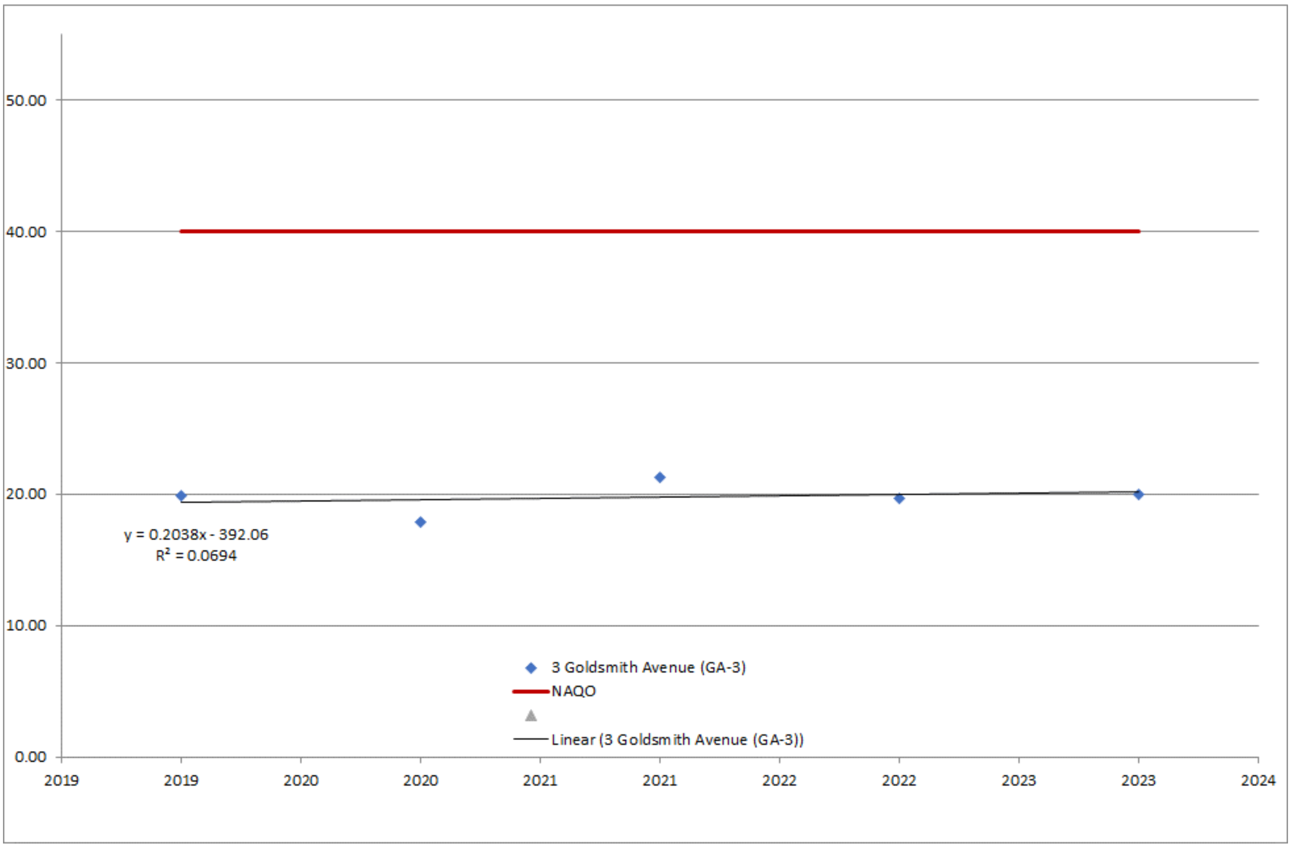


Figure F.71: 147 Albert Road (AR-147)

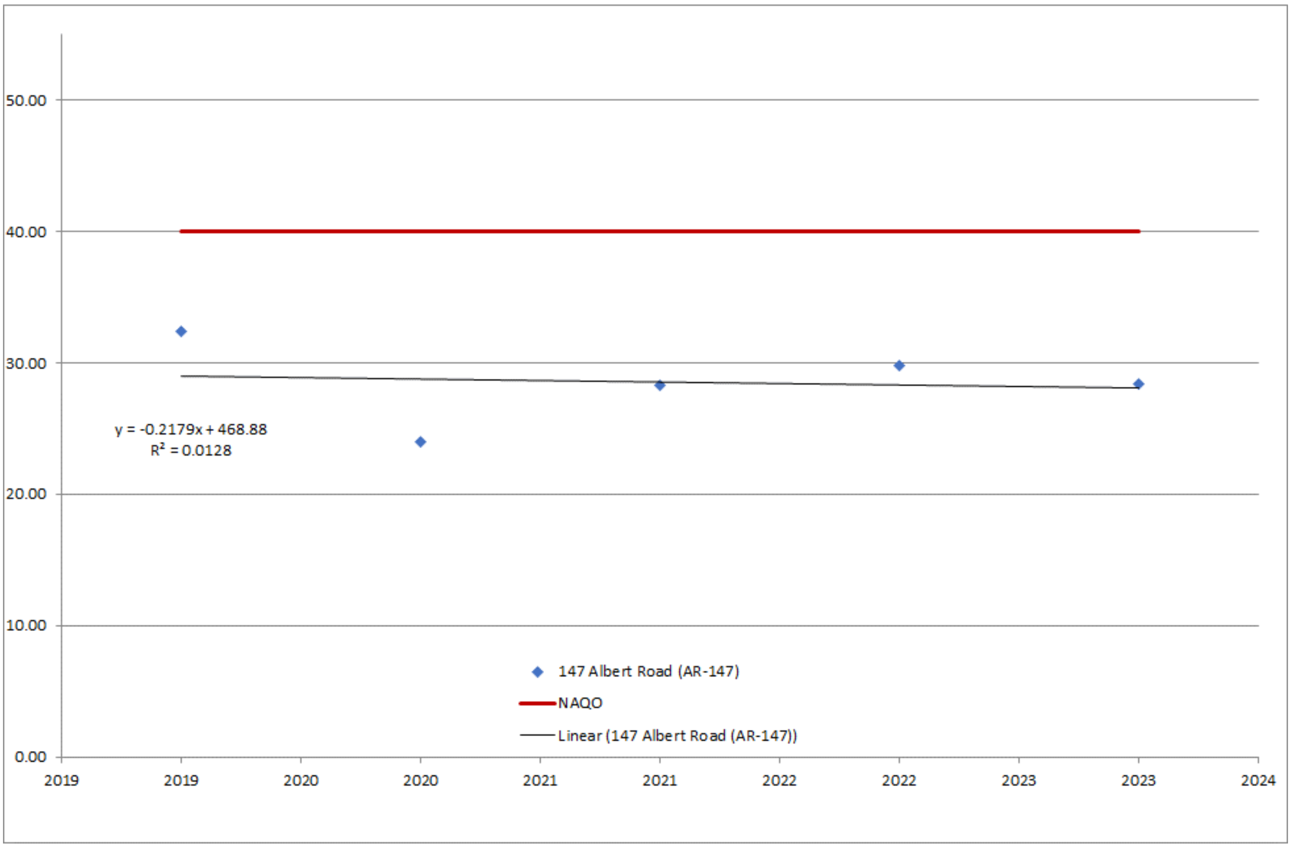


Figure F.72: Albert Road Column 22 (AR-Col22)

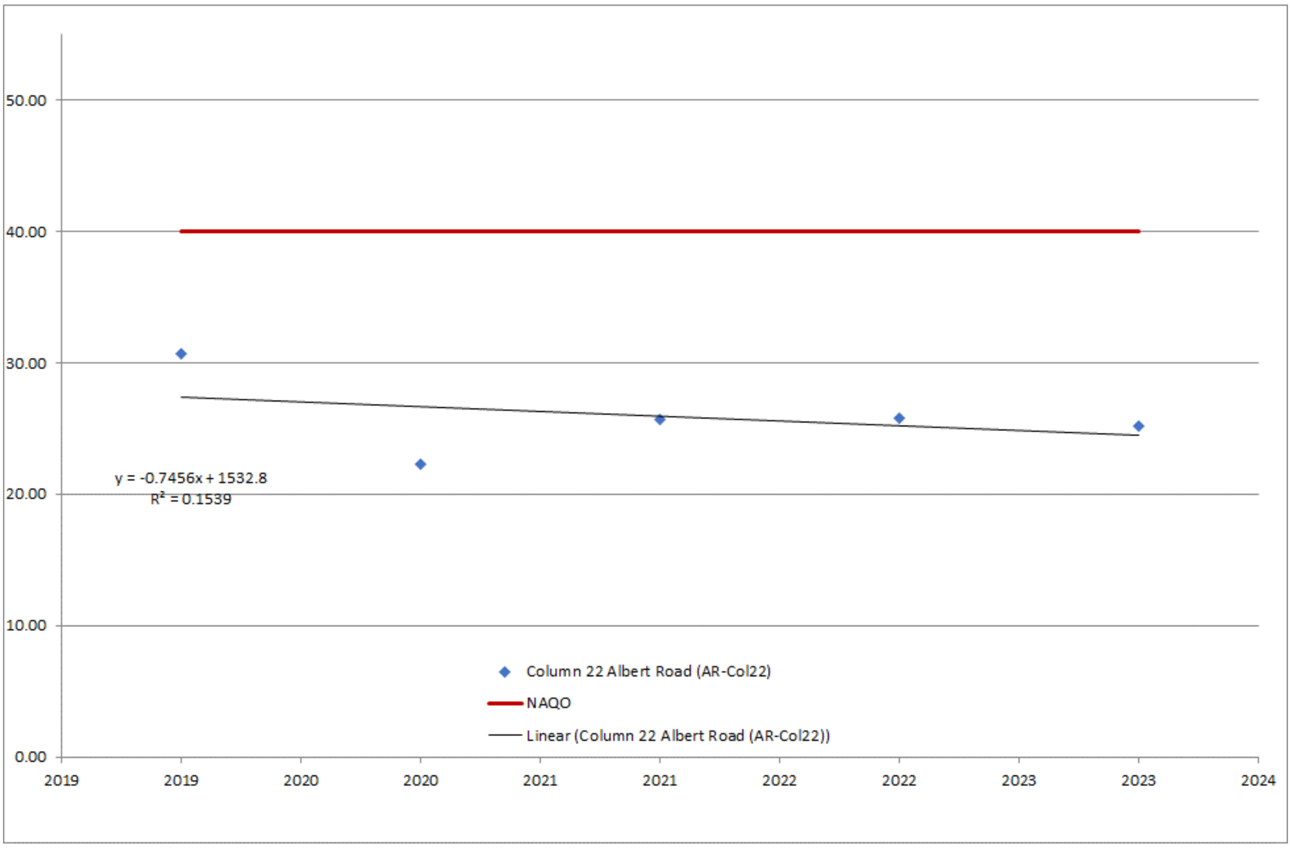


Figure F.73: 106-108 Albert Road (AR-WR)

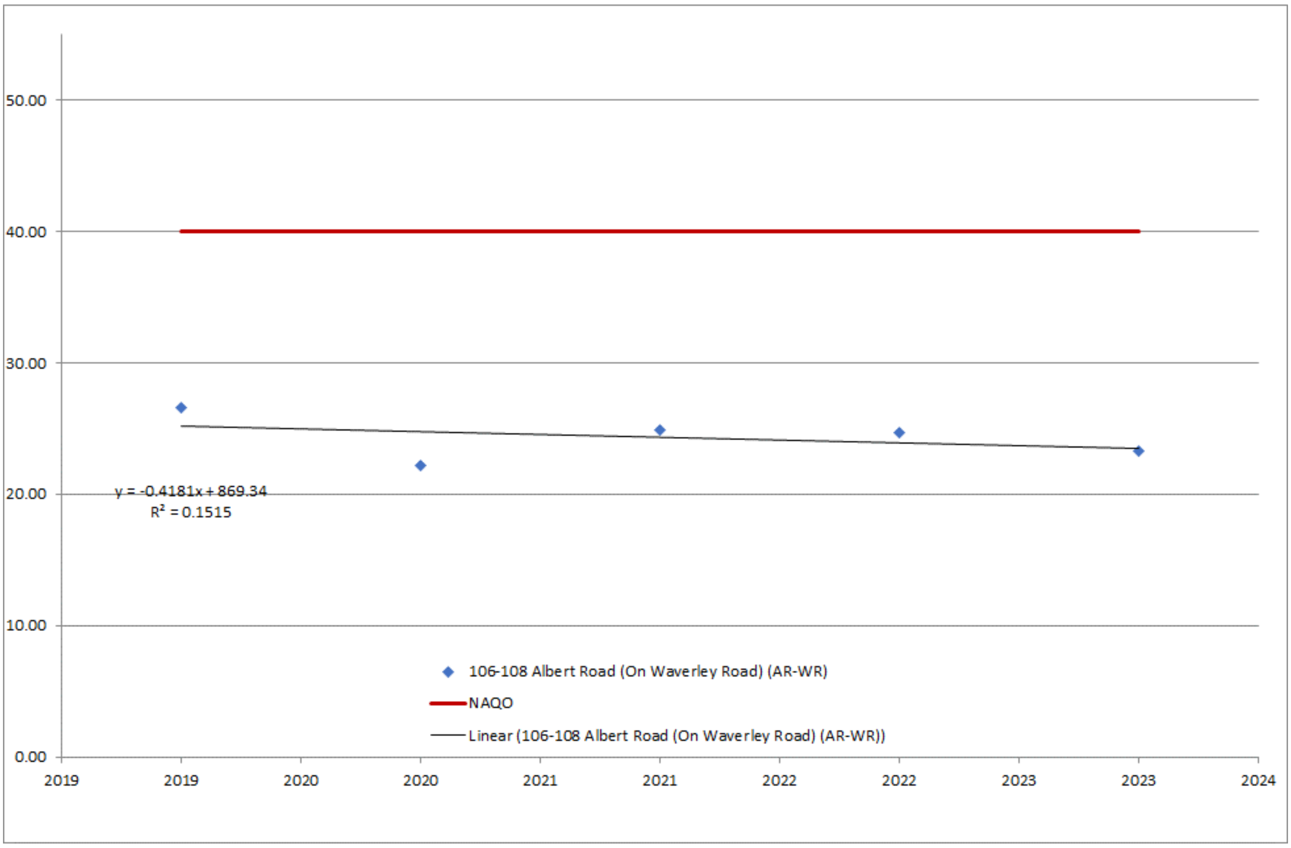


Figure F.74: 141 Albert Road (AR-141)

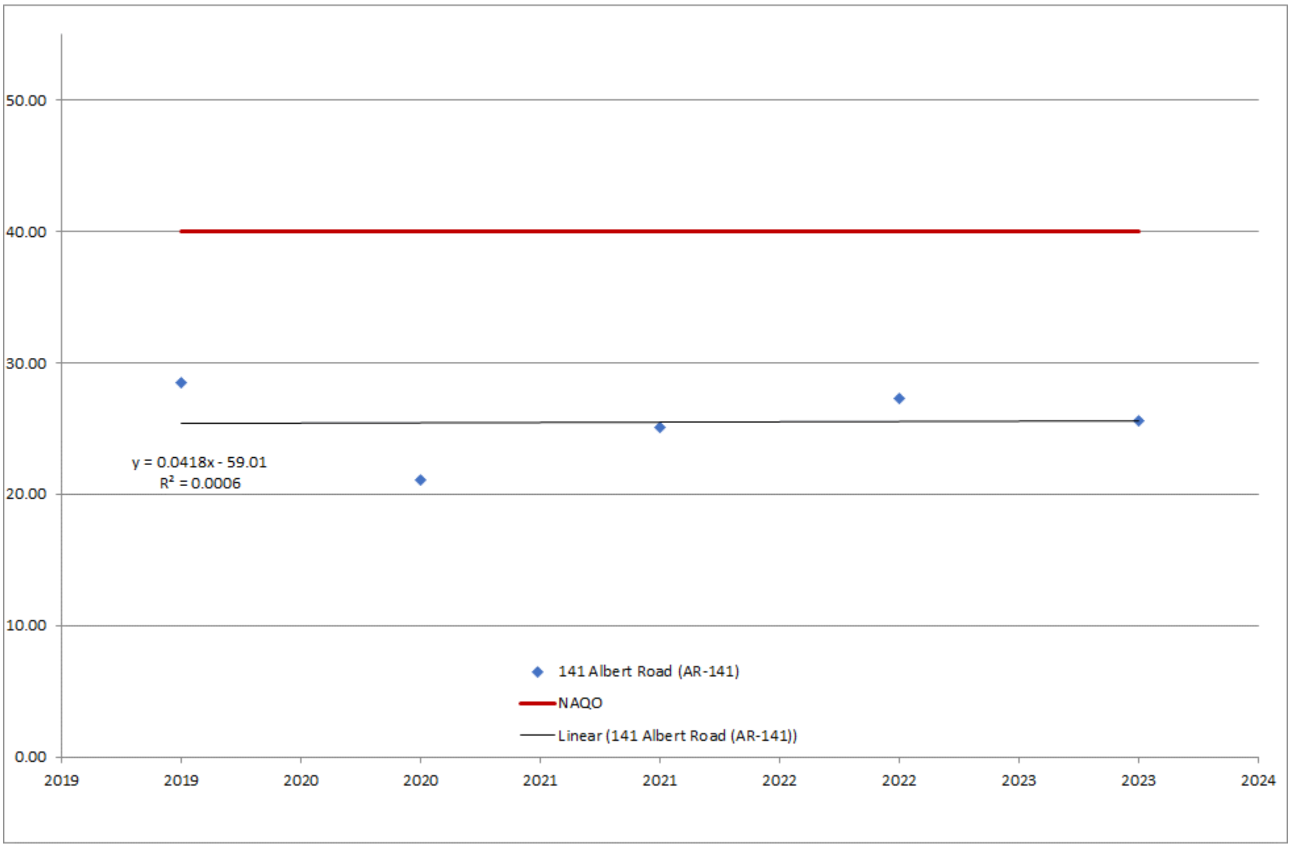


Figure F.75: 145 Albert Road (AR-145)

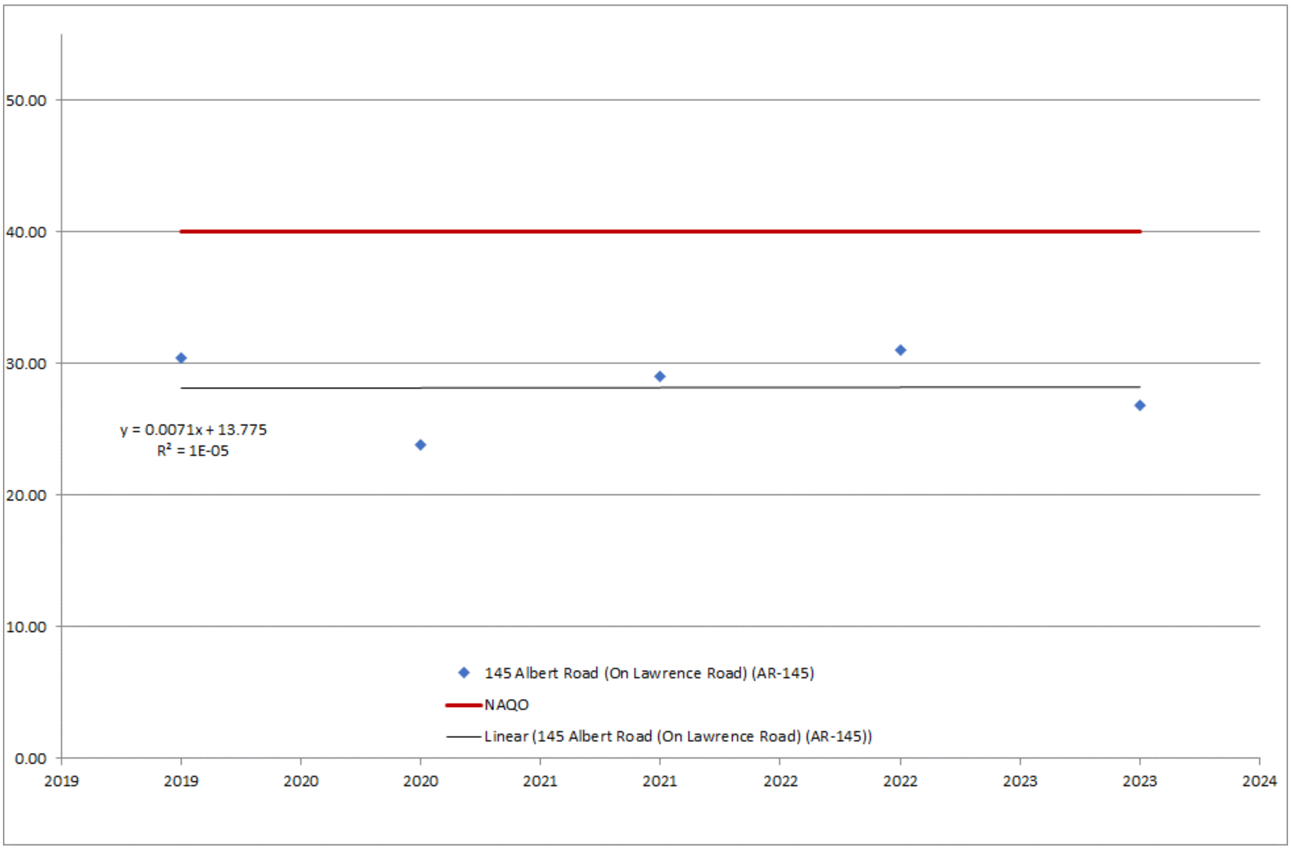


Figure F.76: 98/100 Albert Road (AR-98/100)

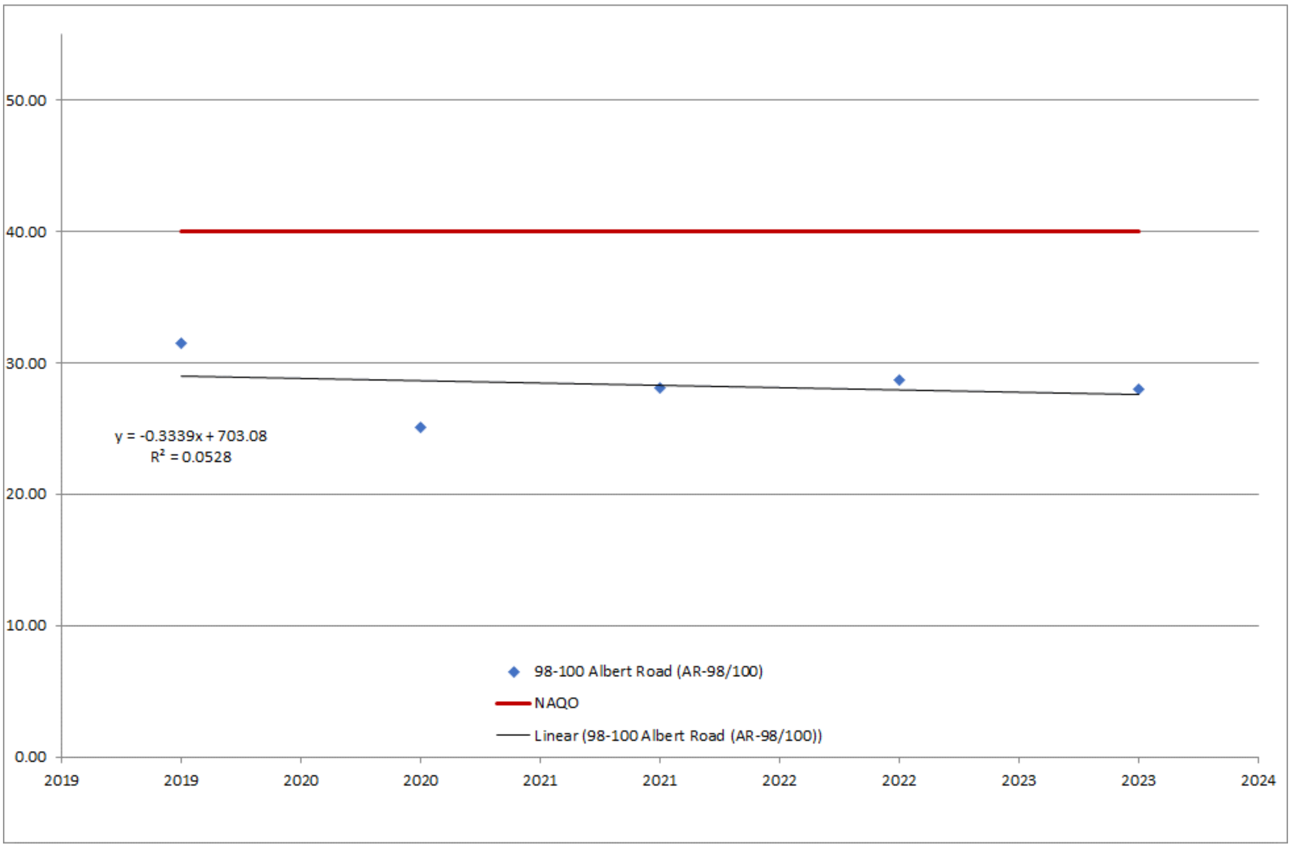


Figure F.77: 91 Fawcett Road (FR-91)

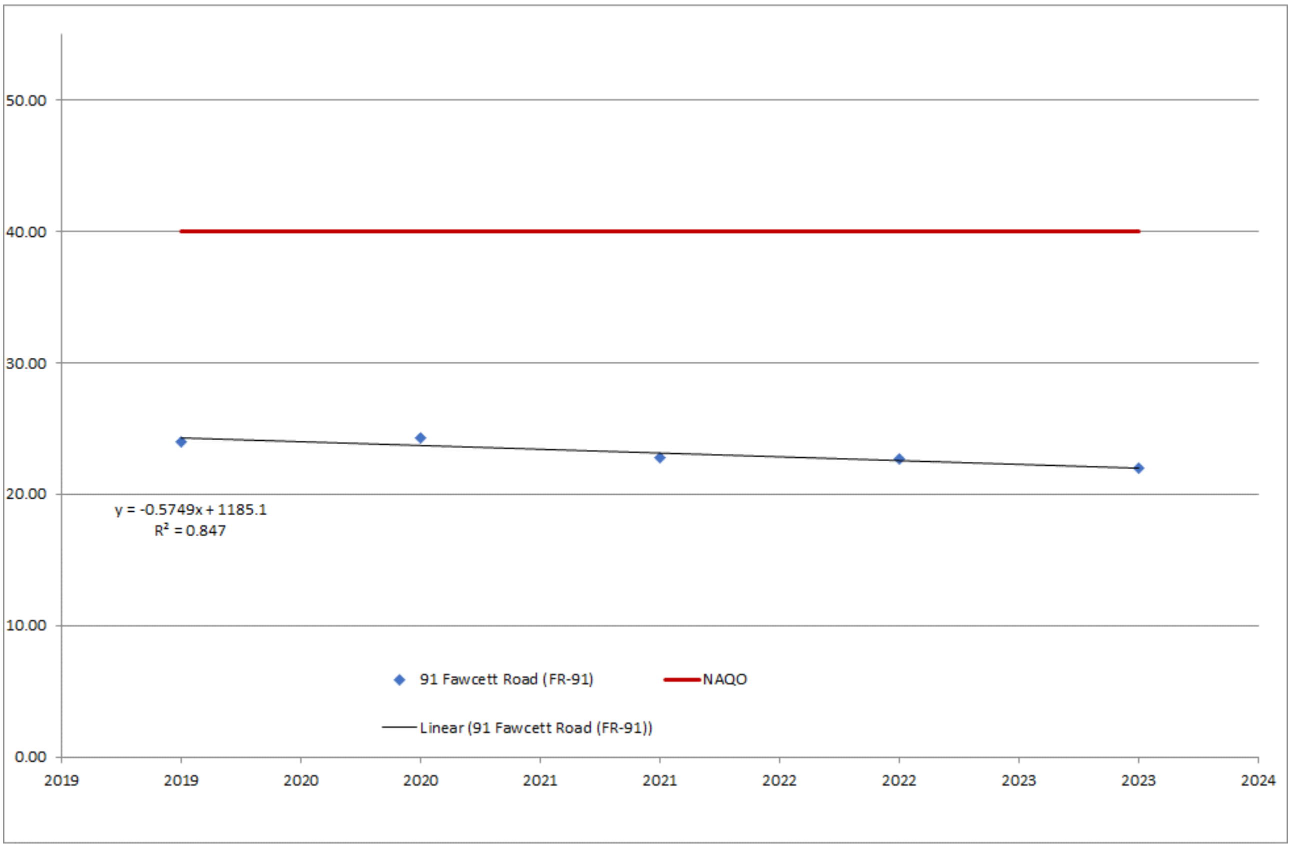


Figure F.78: Fawcett Road Priory School (FR-PSch)

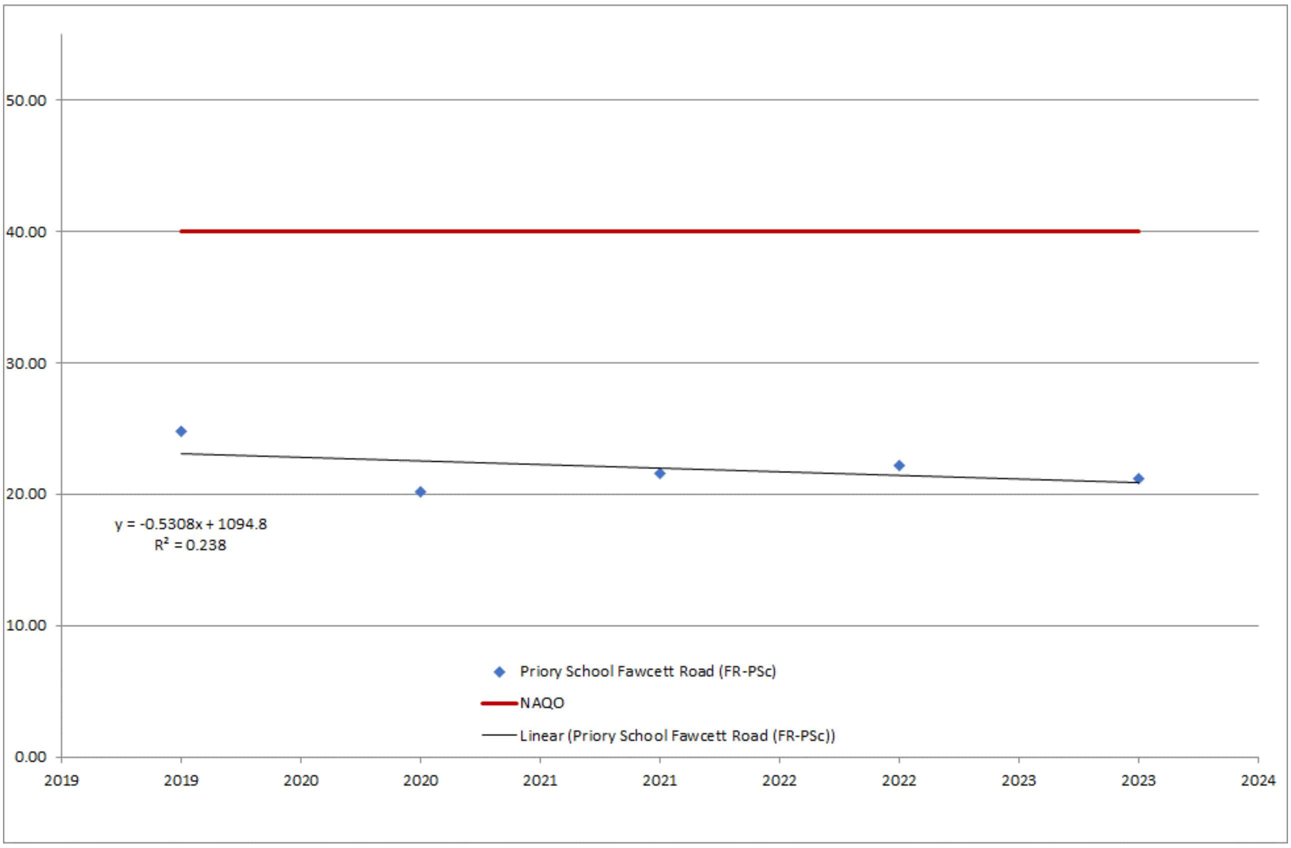


Figure F.79: Lawrence Road Brandon House (LR-BH)

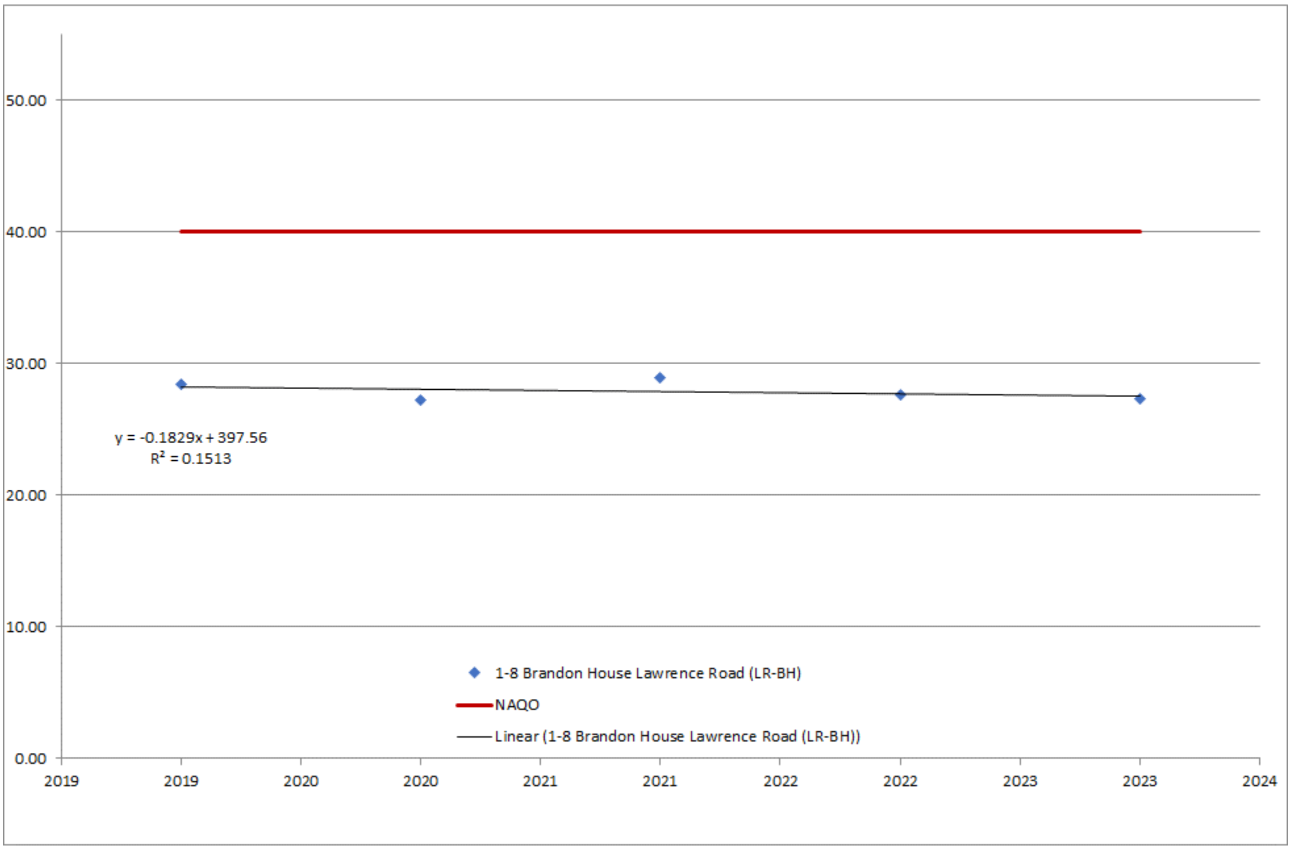


Figure F.80: 110A Albert Road (AR-110A)

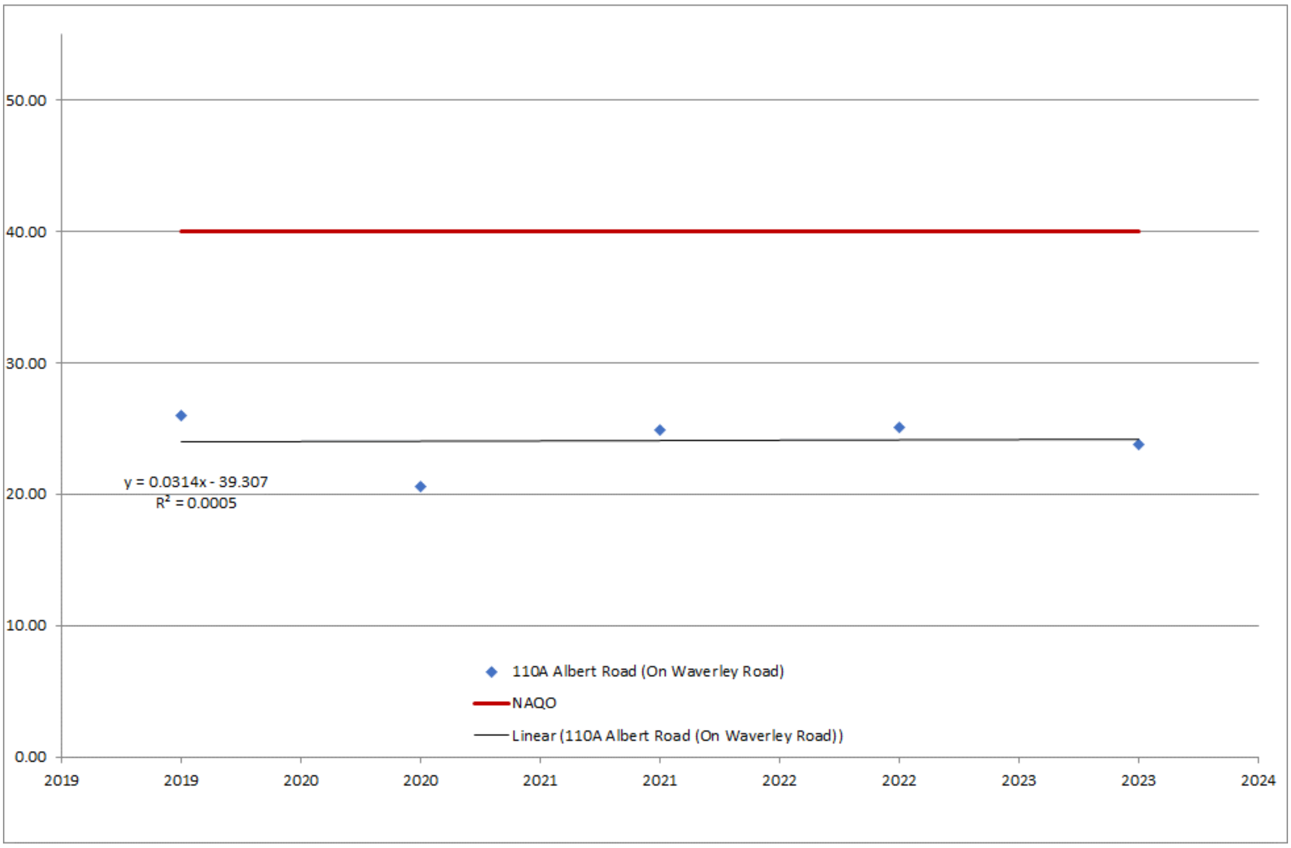


Figure F.81: 18 Baffins Road (BR-18)

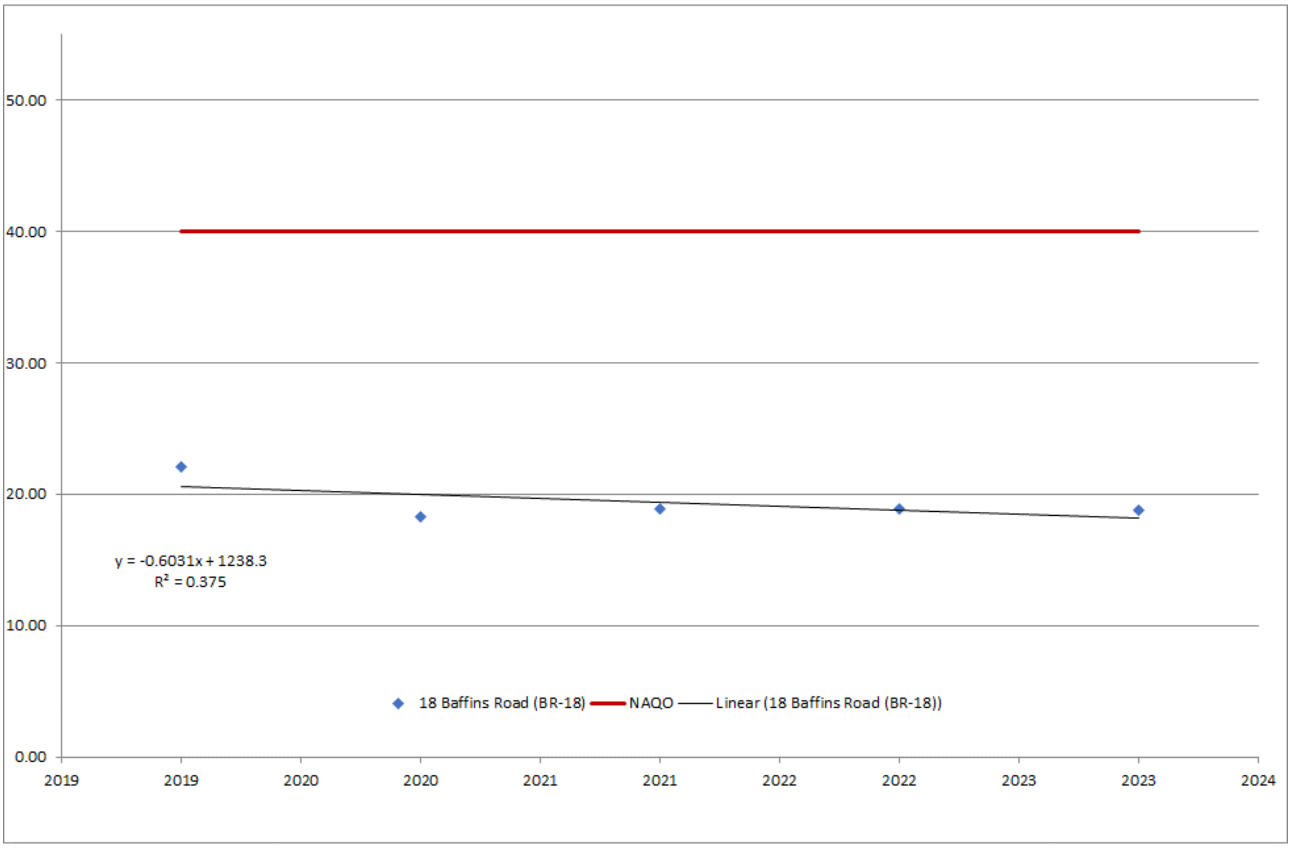


Figure F.82: 3 Baffins Road (BR-3)

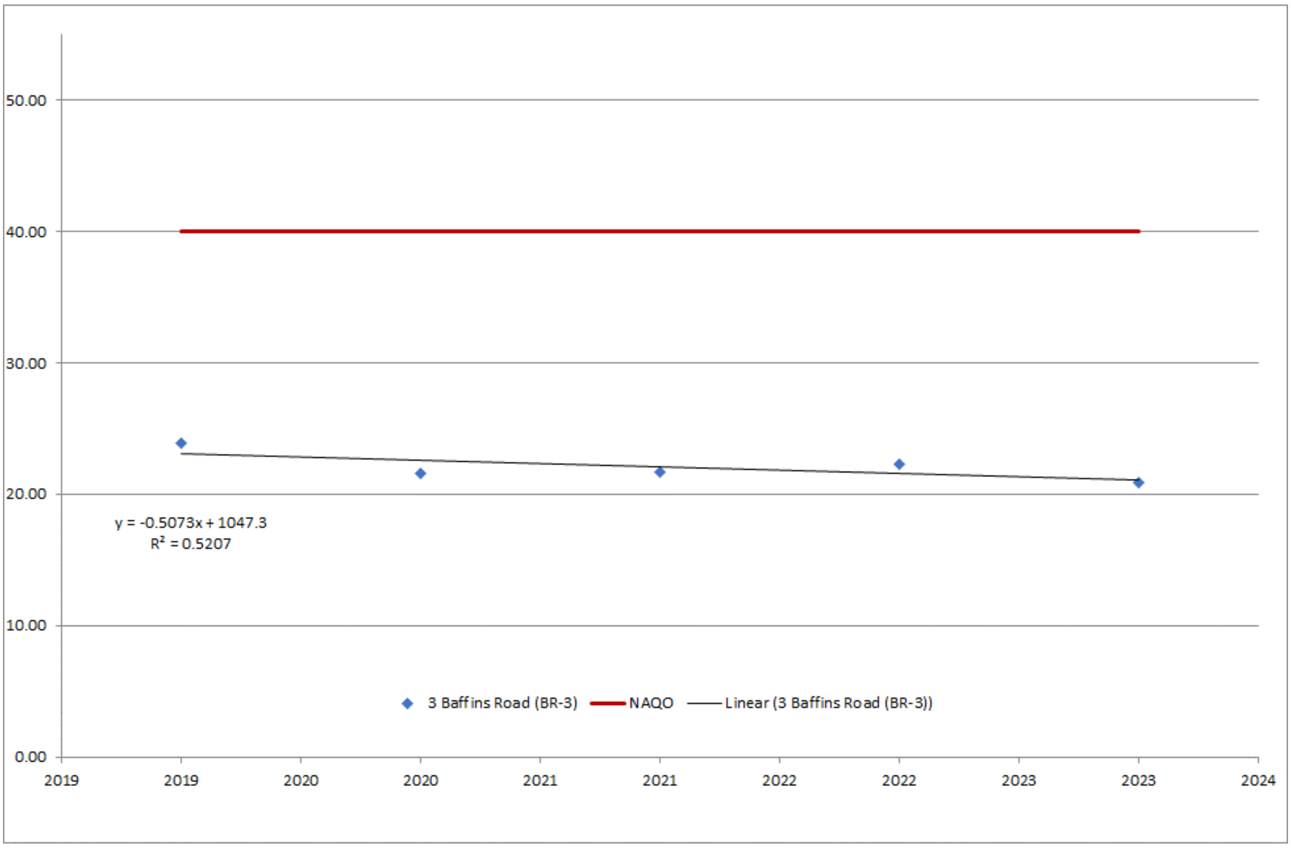


Figure F.83: 13 Locksway Road (LR-13)

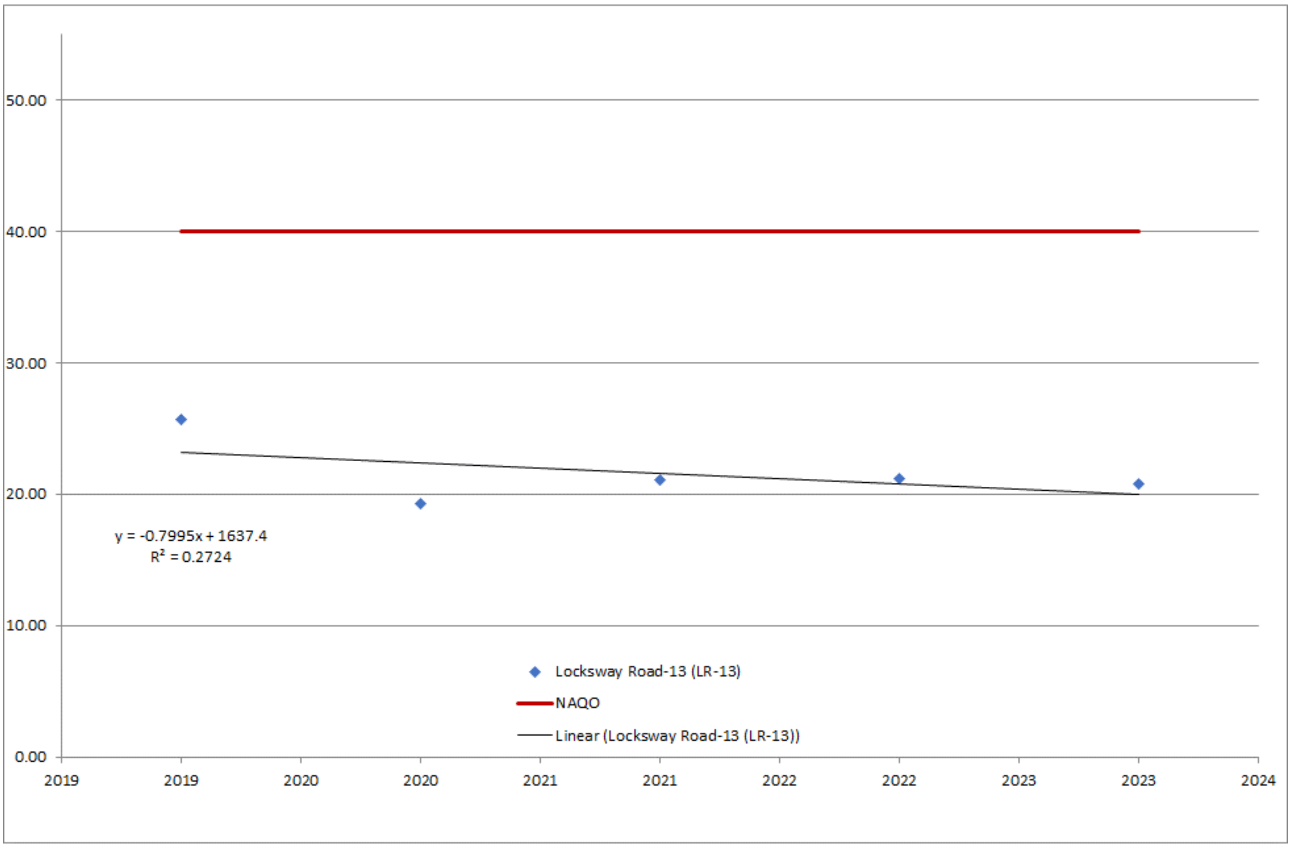


Figure F.84: 40 Victoria Road North (VRN-40)

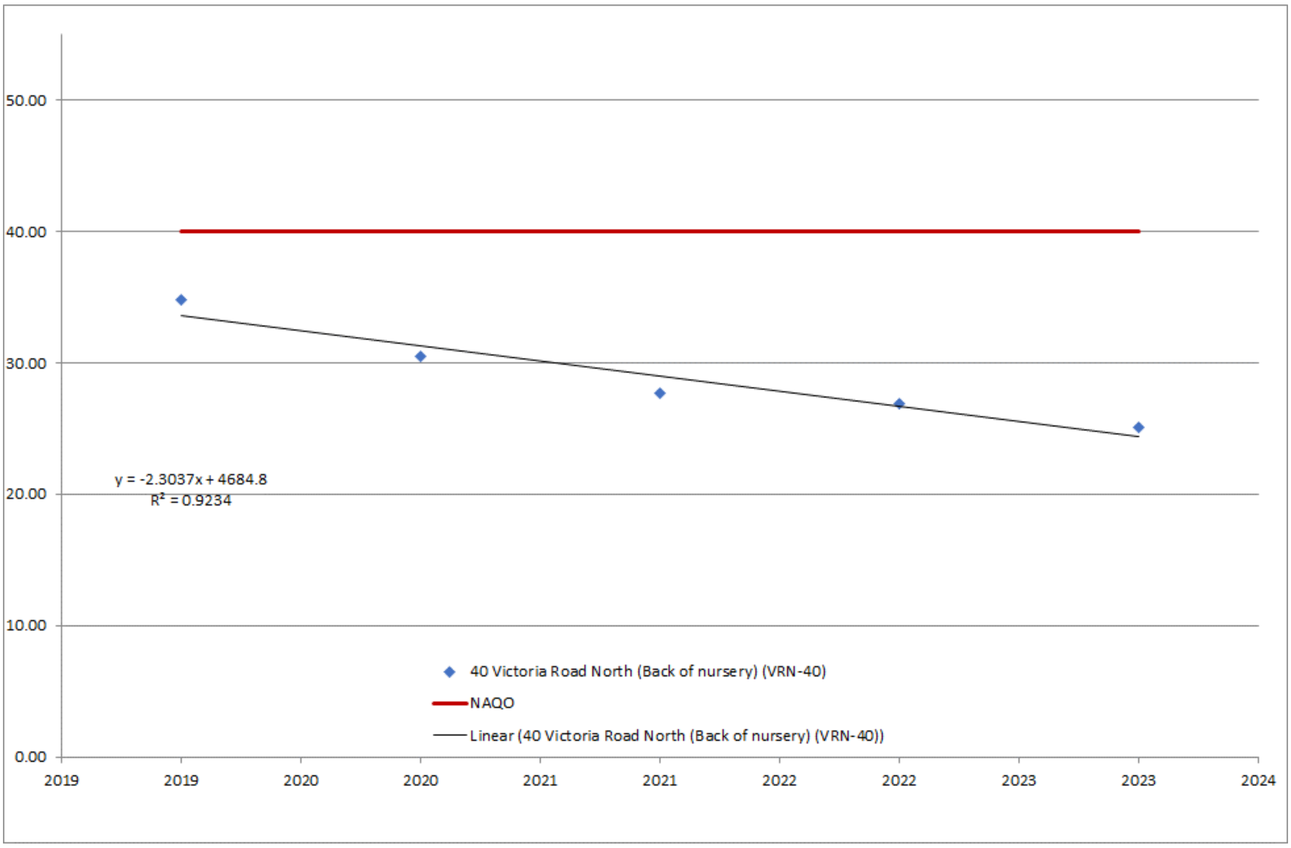


Figure F.85: Albert Road Mary Rose Centre (AR-MRC)

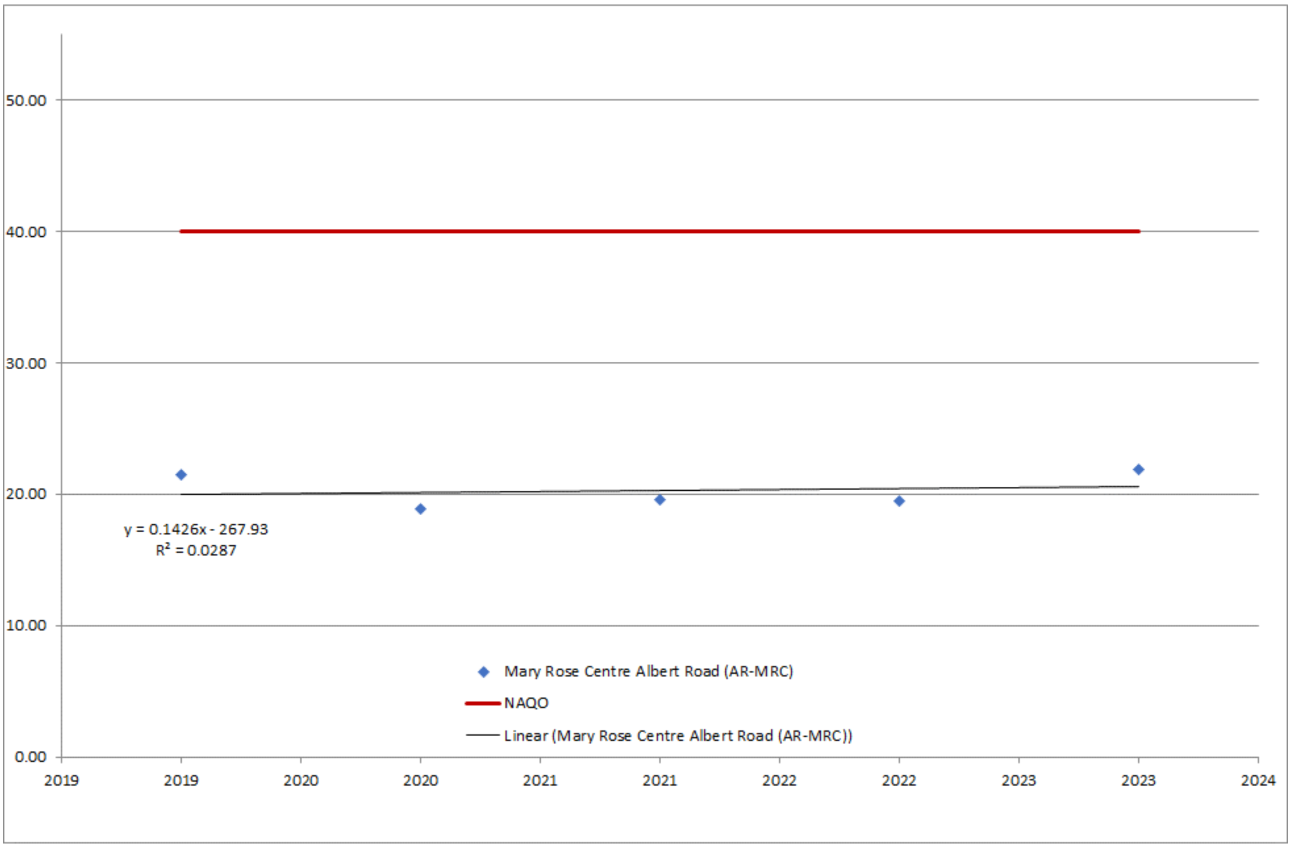


Figure F.86: 29 Goldsmith Avenue (GA-29)

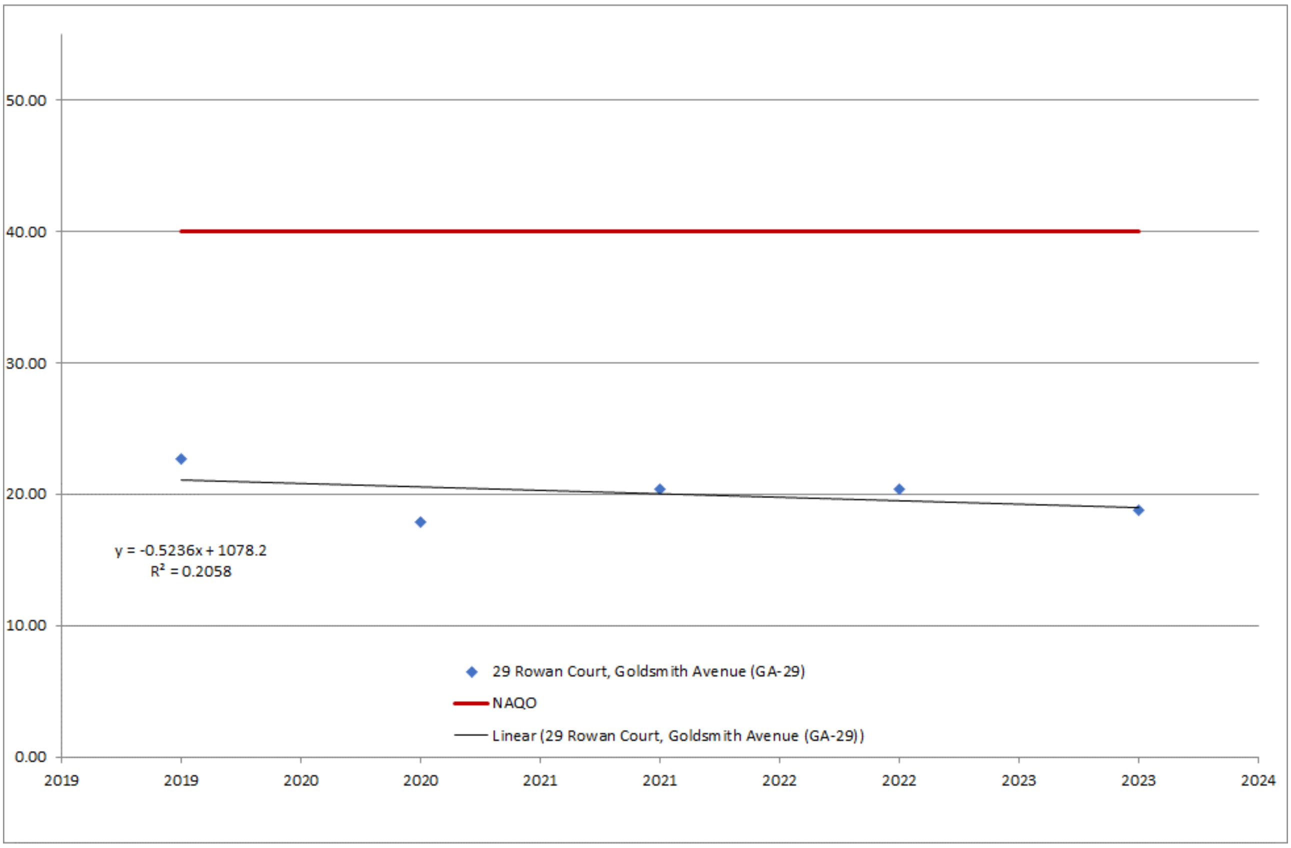


Figure F.87: 13-28 Eastern Road (ER-13/28)

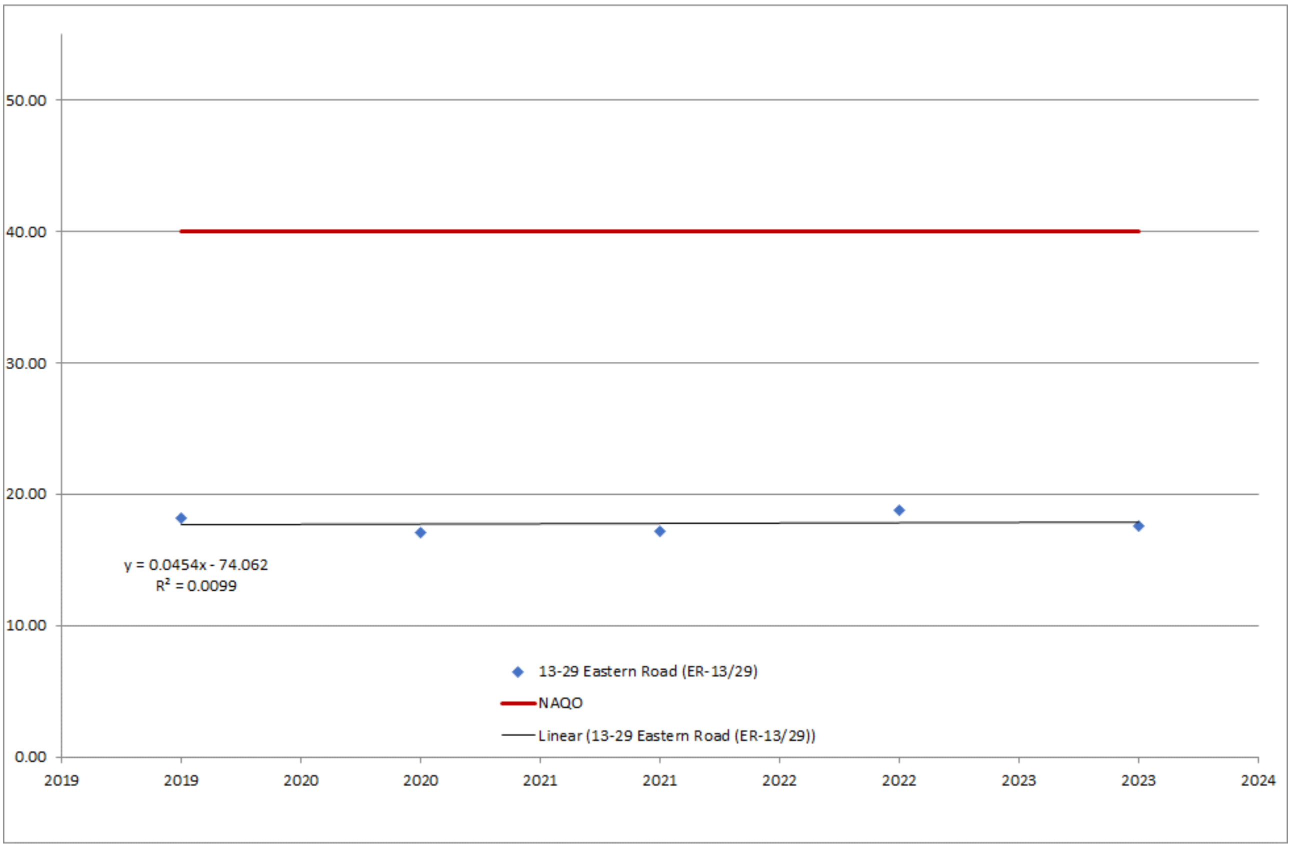


Figure F.88: 64-80 Eastern Road (ER-64/80)

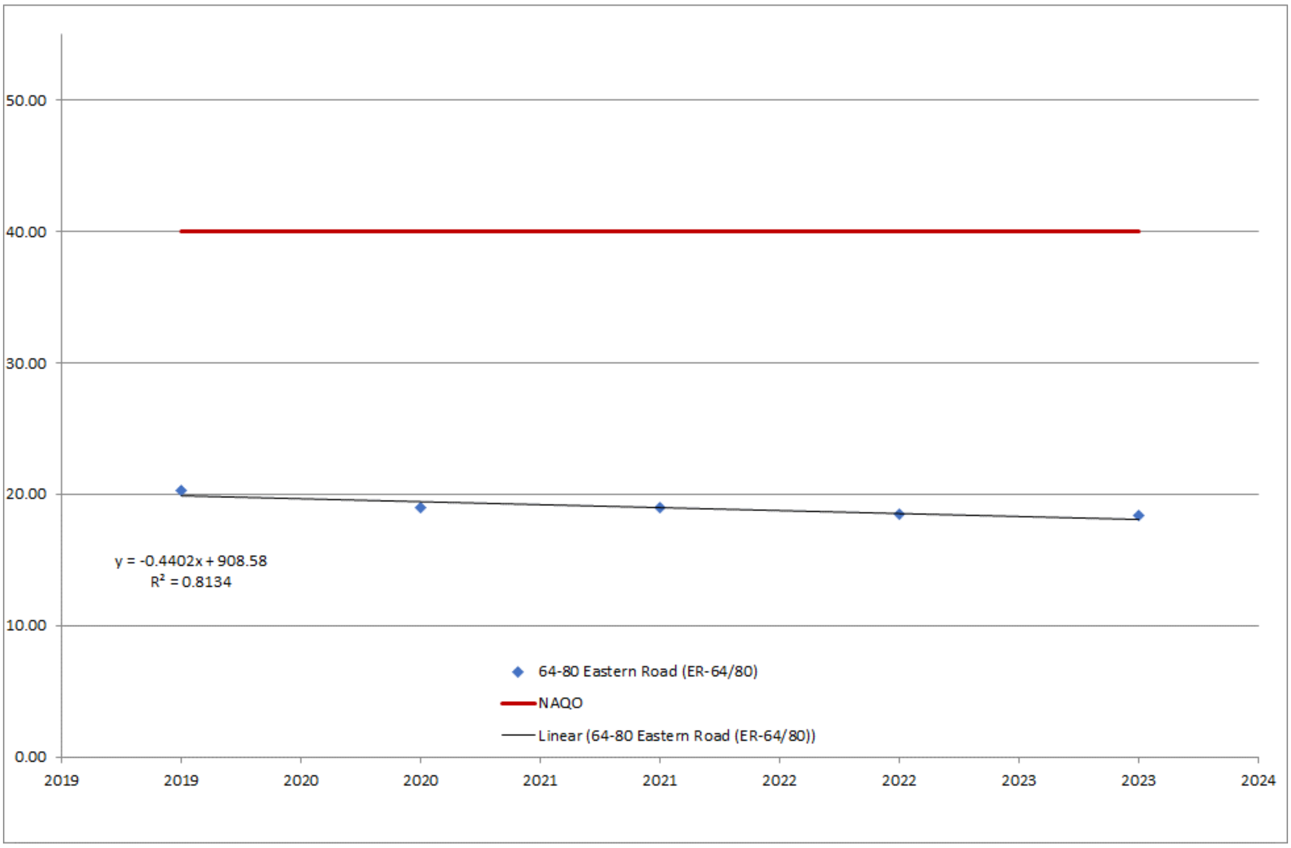


Figure F.89: 340 Havant Road (HR-340)

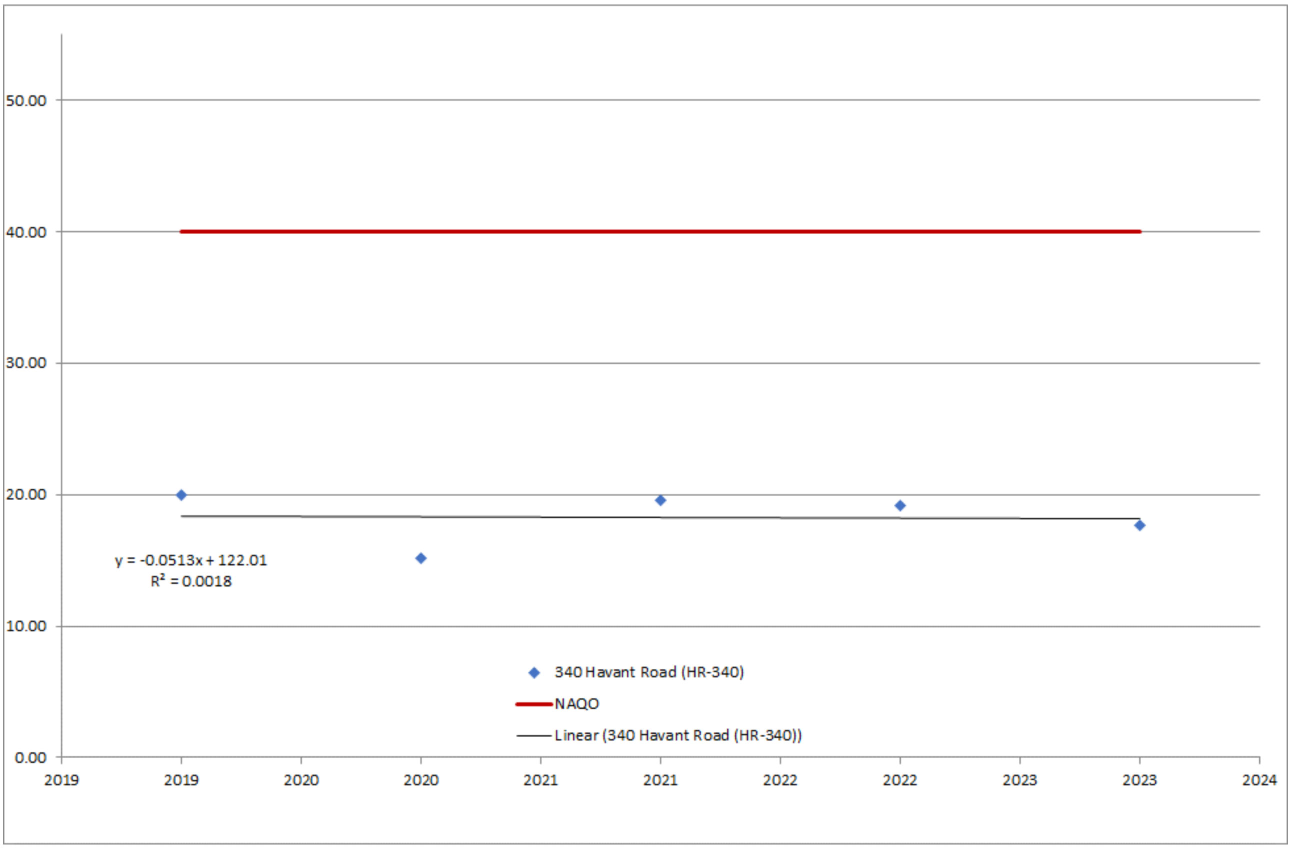


Figure F.90: Havant Road Column 52 (HR-Col52)

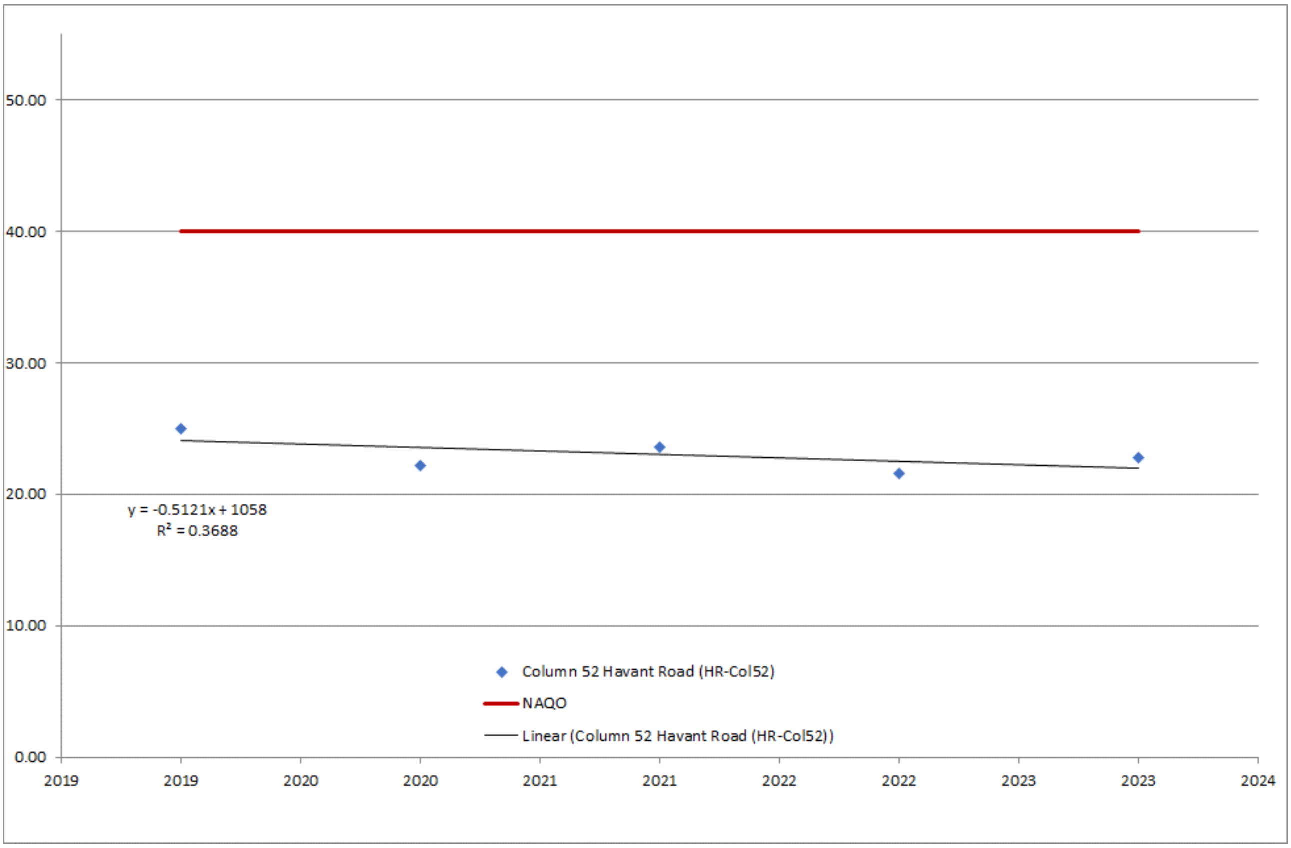


Figure F.91: Service Road Hillside & Wymering Centre (SR-HWC)

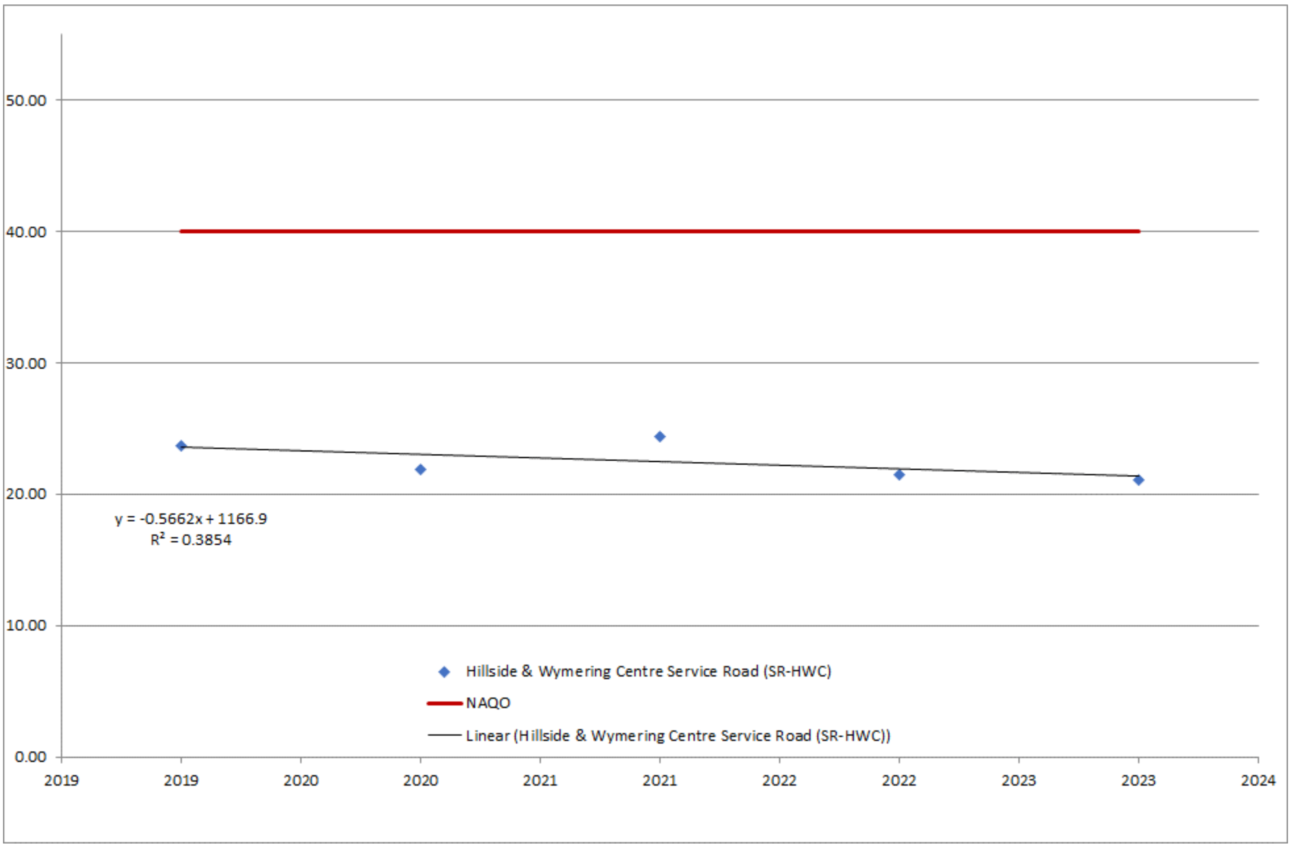


Figure F.92: Northern Road Portsmouth University Technical College (NR-UTC)

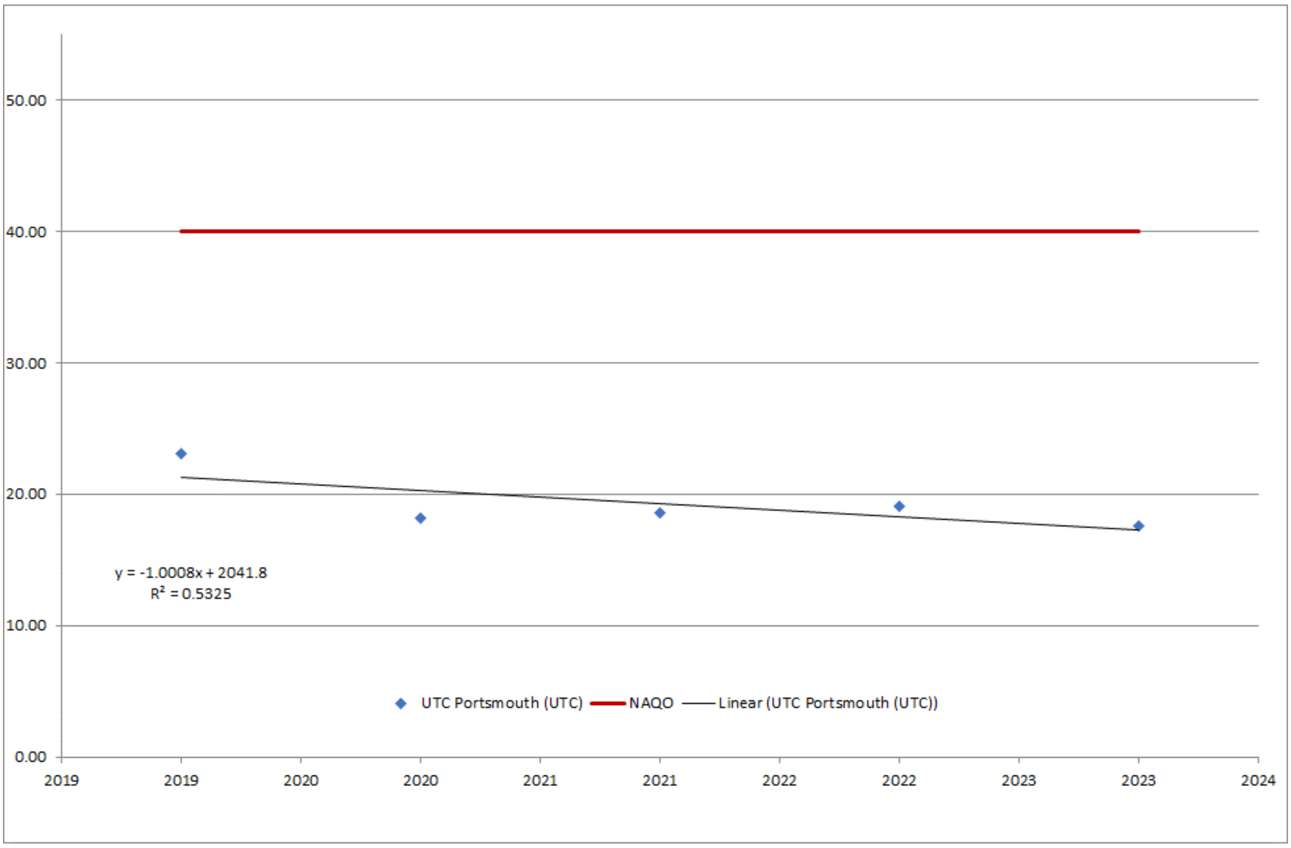


Figure F.93: 137 London Road (LR-137)

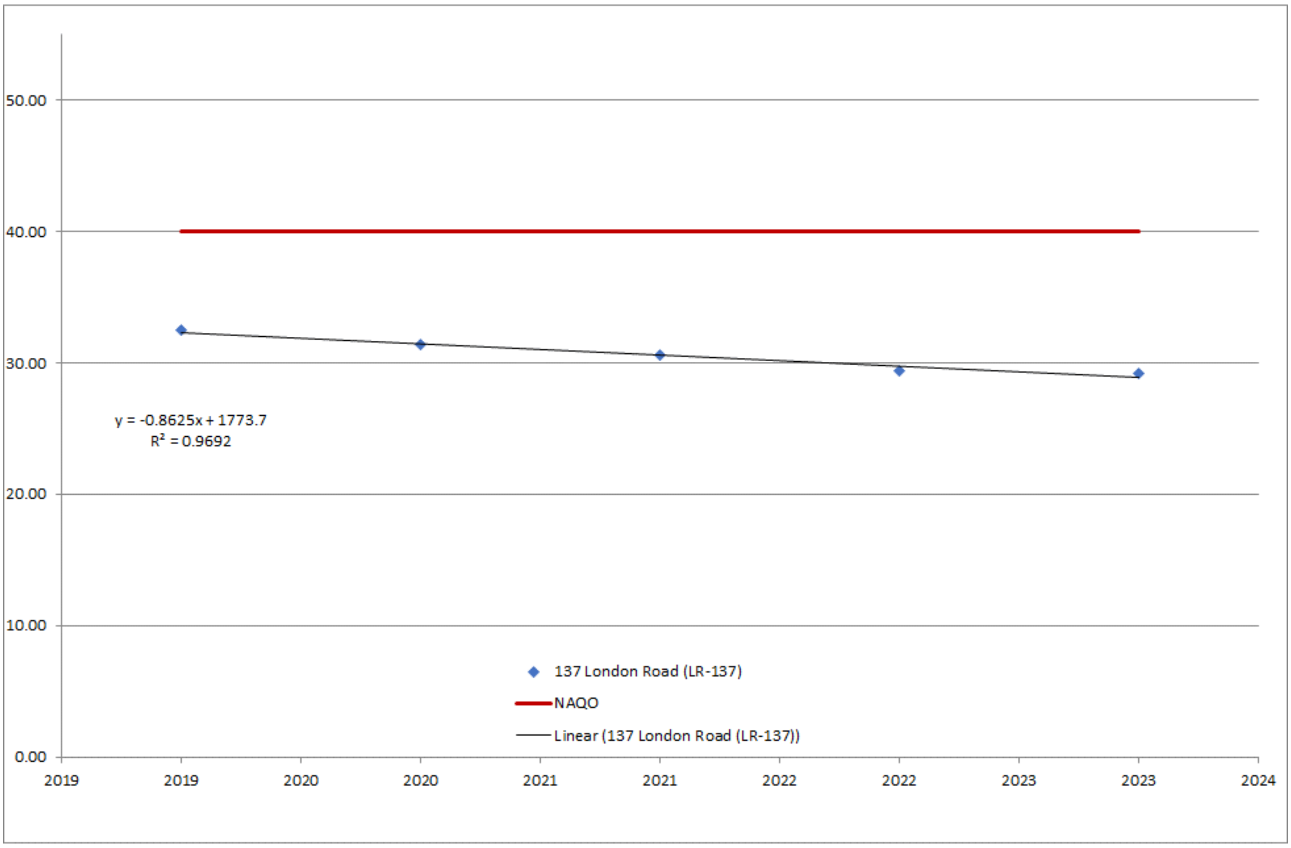


Figure F.94: 122-124 London Road (LR-122/124)

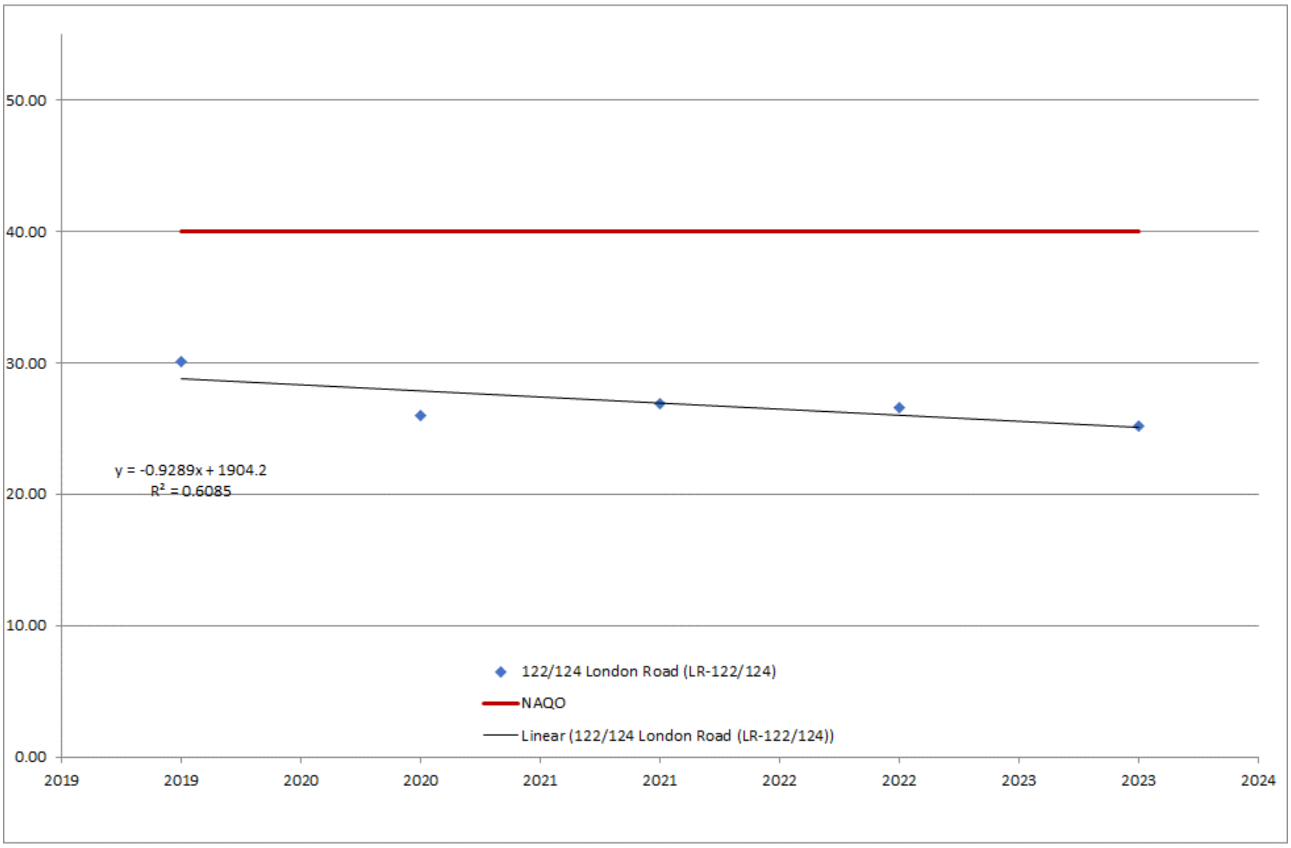


Figure F.95: 2a/b Gladys Avenue (GA-2a/b)

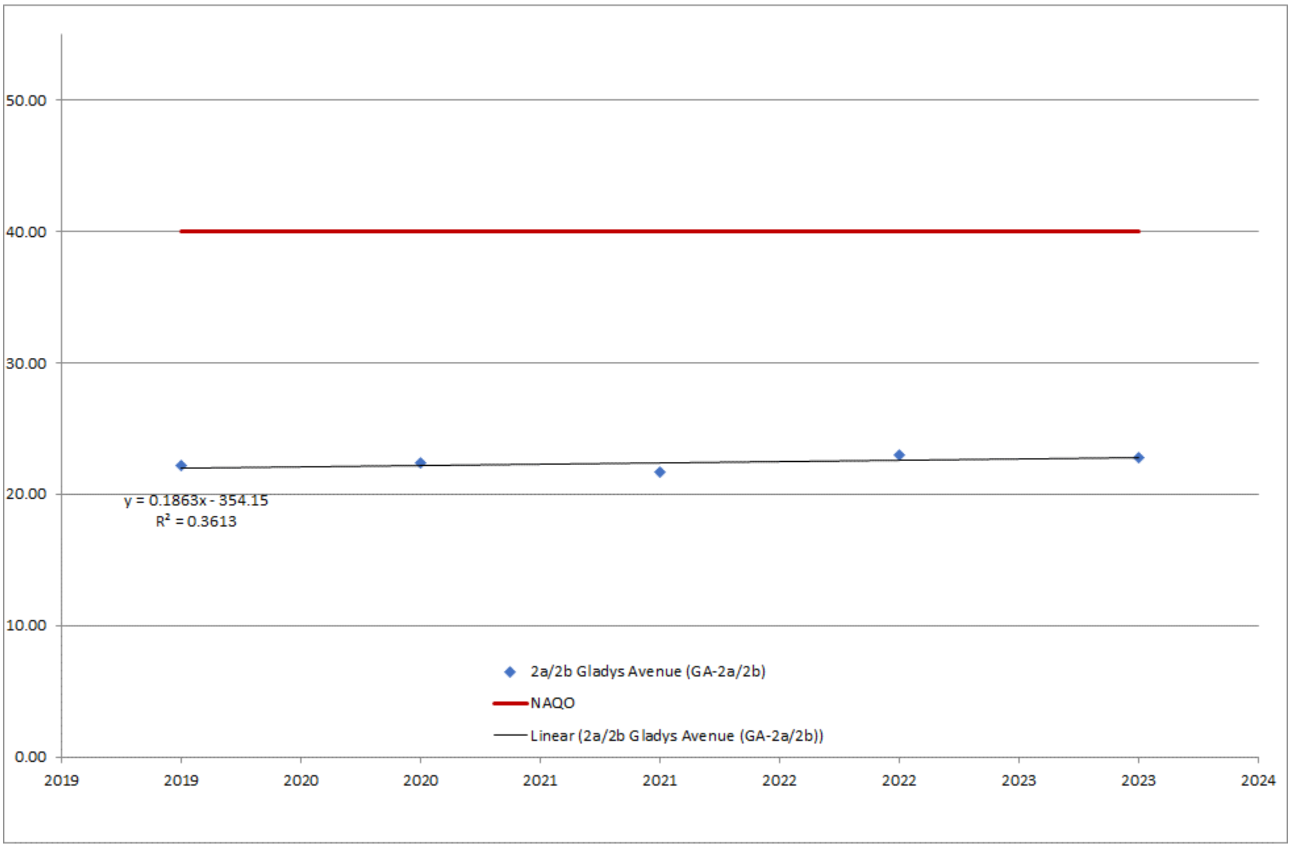


Figure F.96: Gladys Avenue Column 3 (GA-Col3)

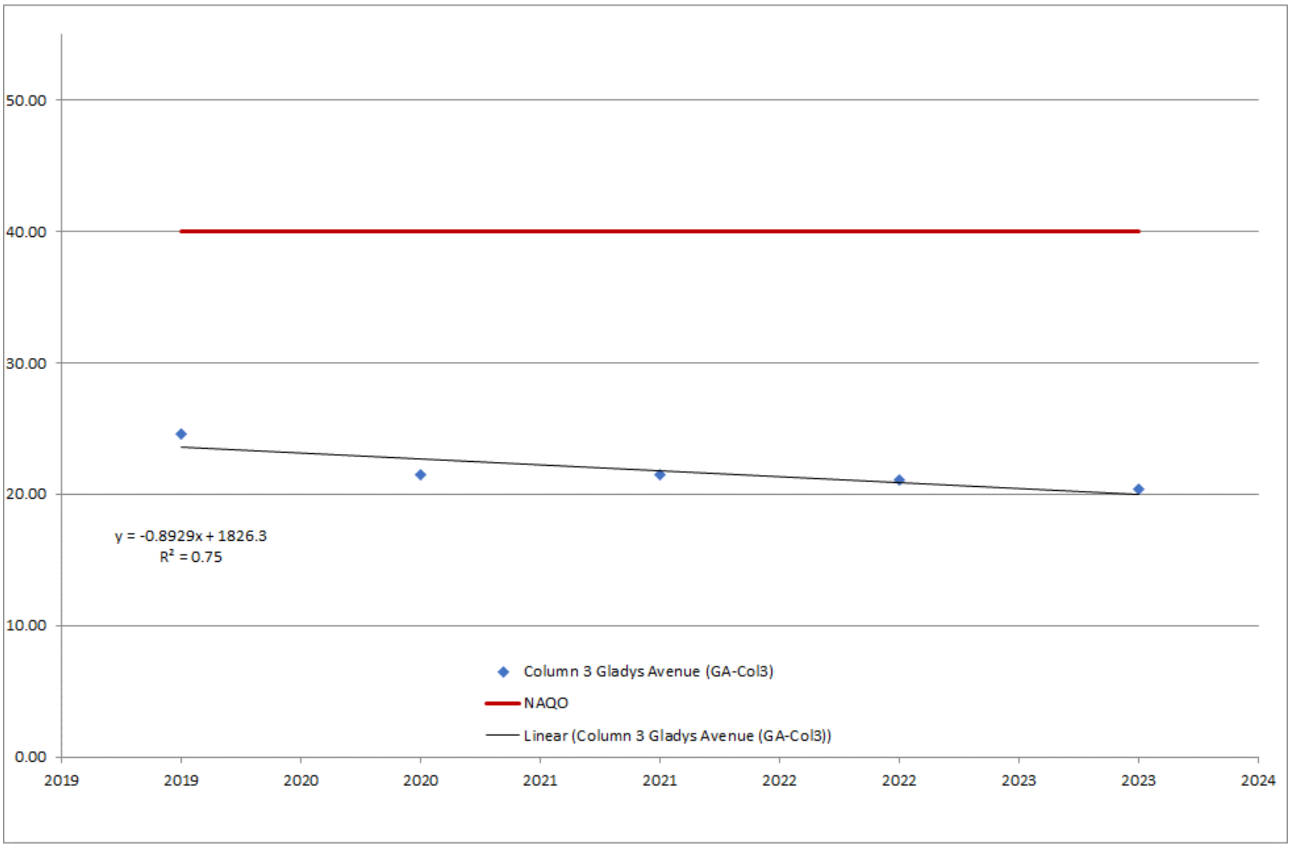


Figure F.97: 42 Tudor Crescent (TC-42)

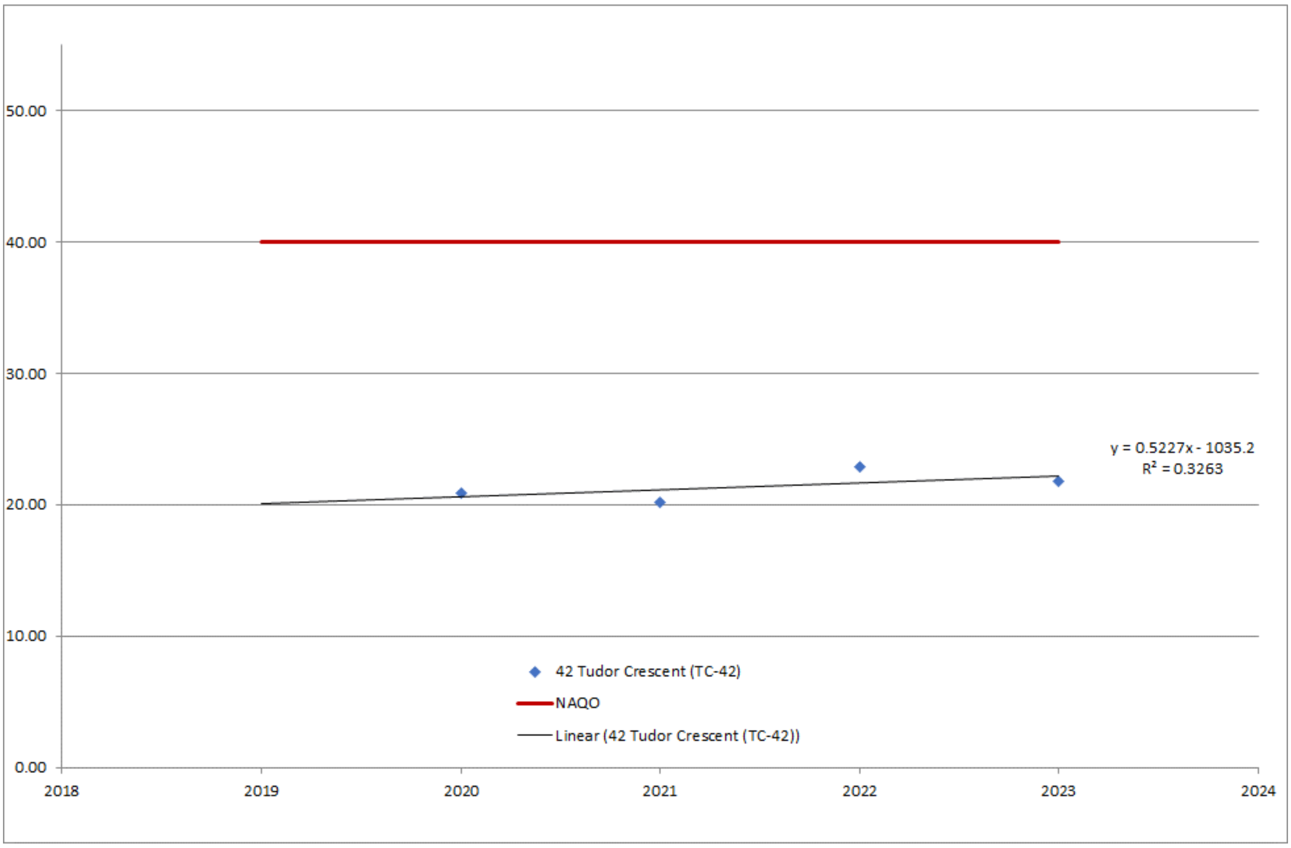


Figure F.98: Kettering Terrace Column 5 (KT-Col5)

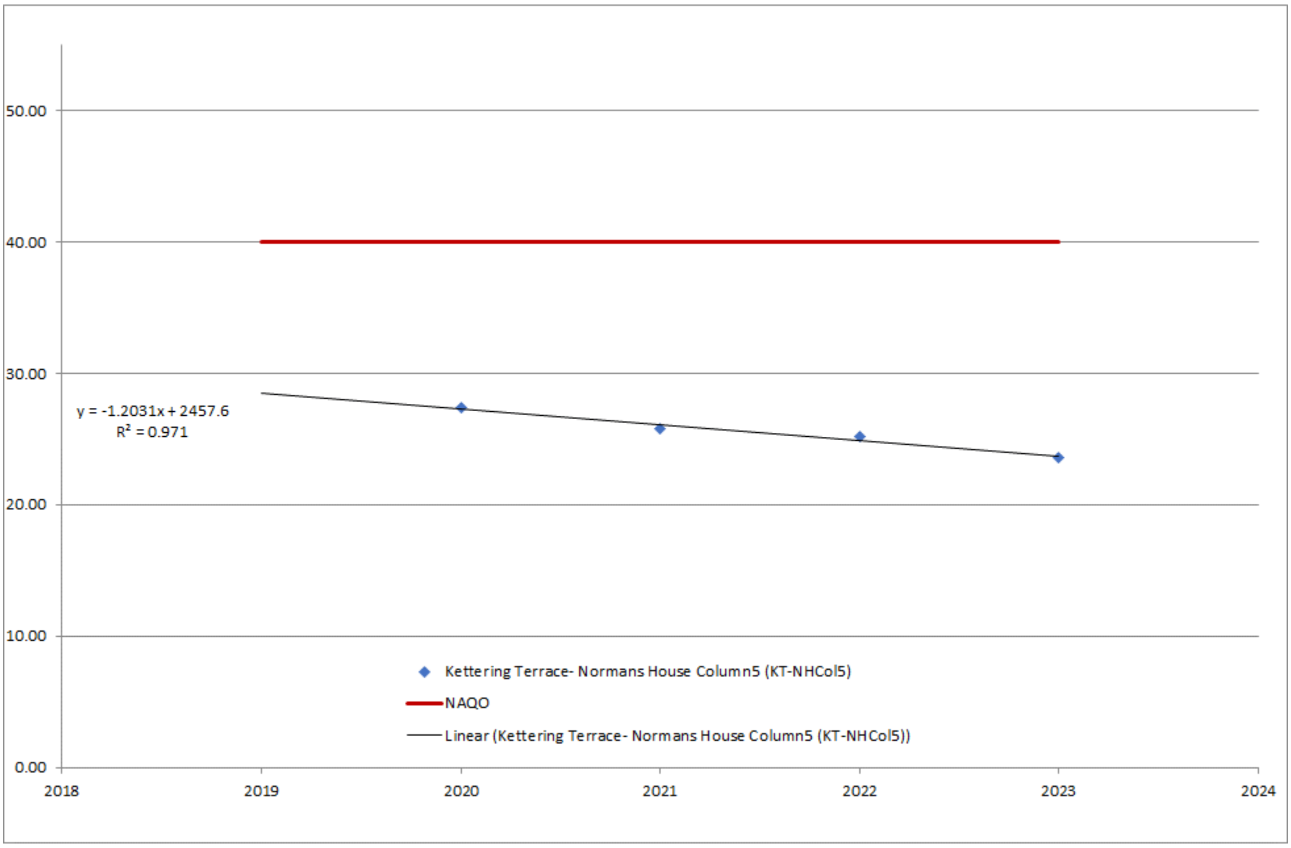


Figure F.99: Kettering Terrace Column 10 (KT-Col10)

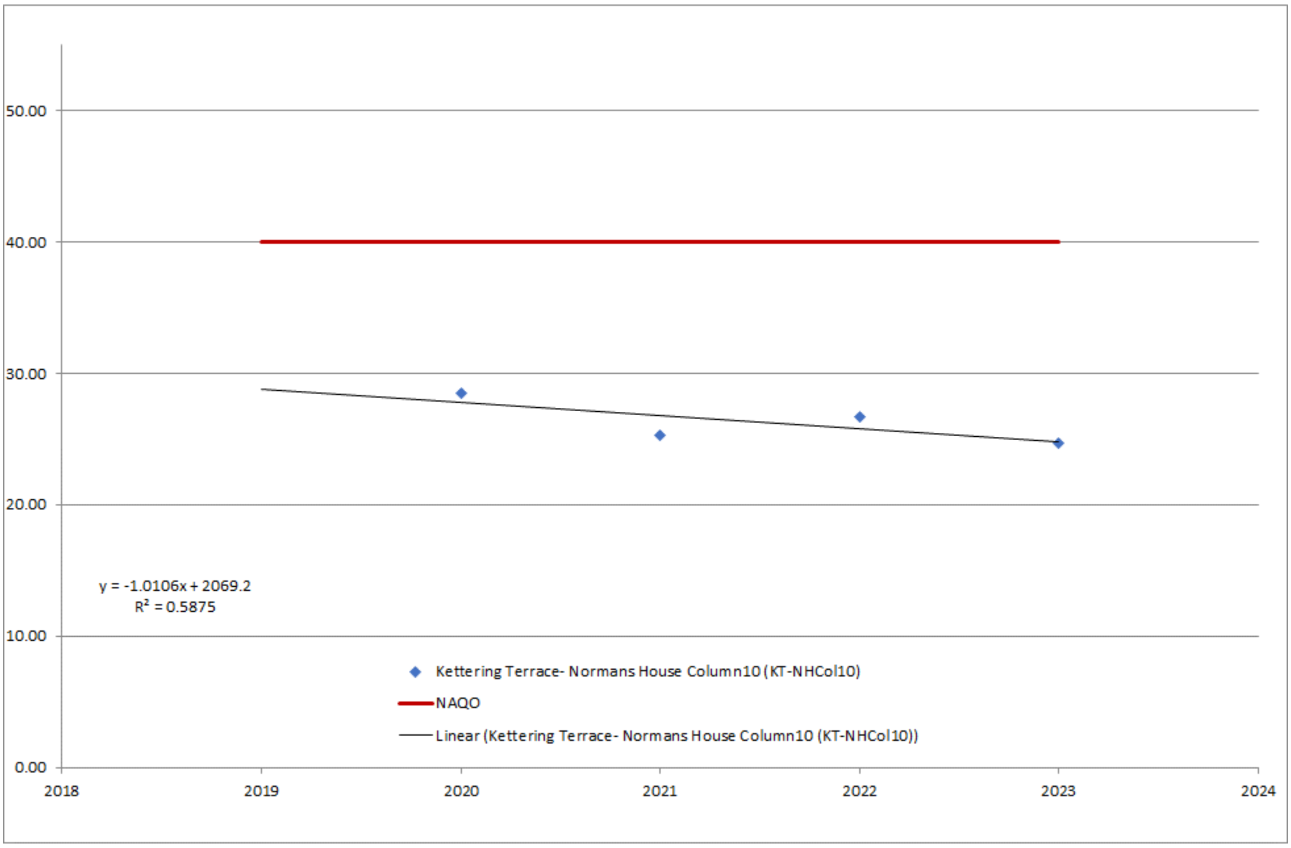


Figure F.100: Prospect Road Column 2 (PR-Col2)

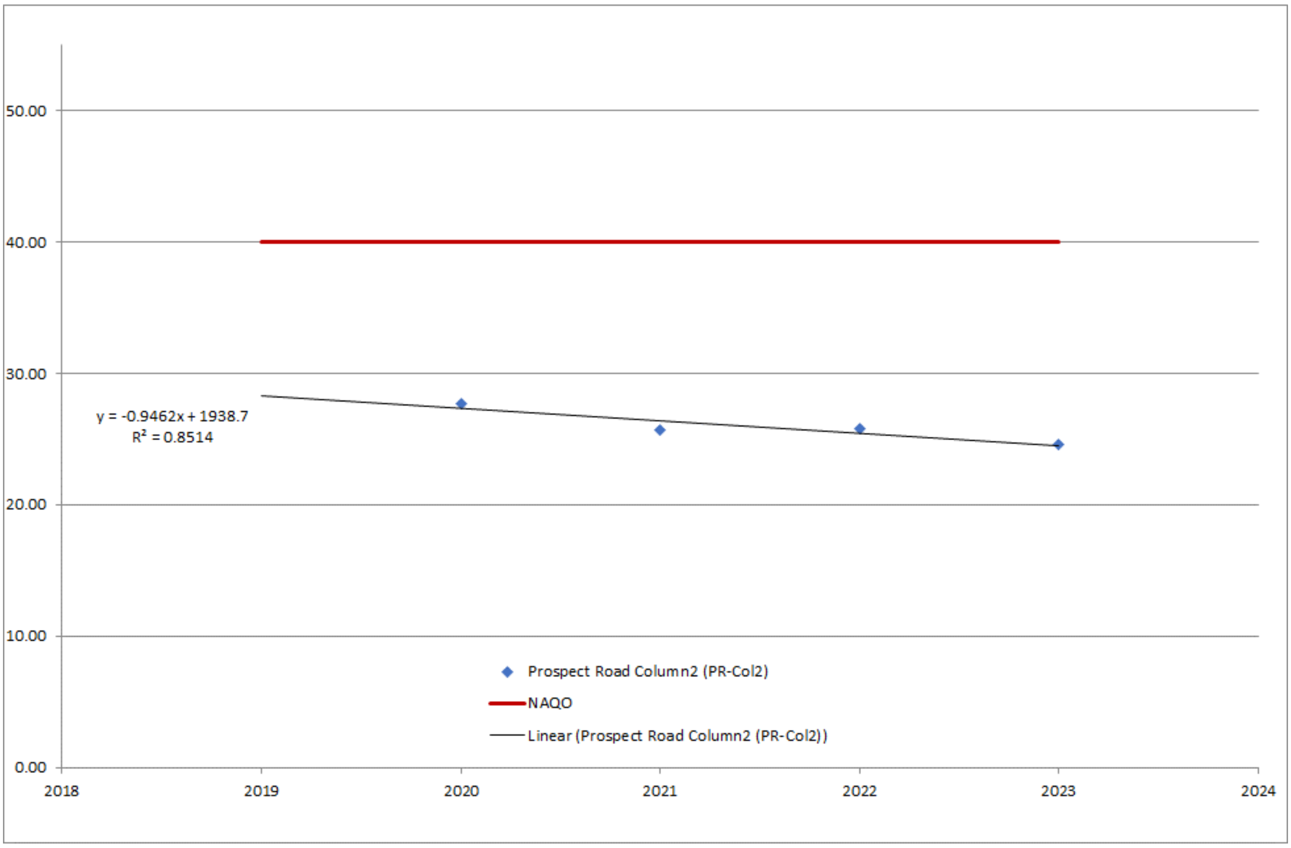


Figure F.101: 46 London Road (LR-46)

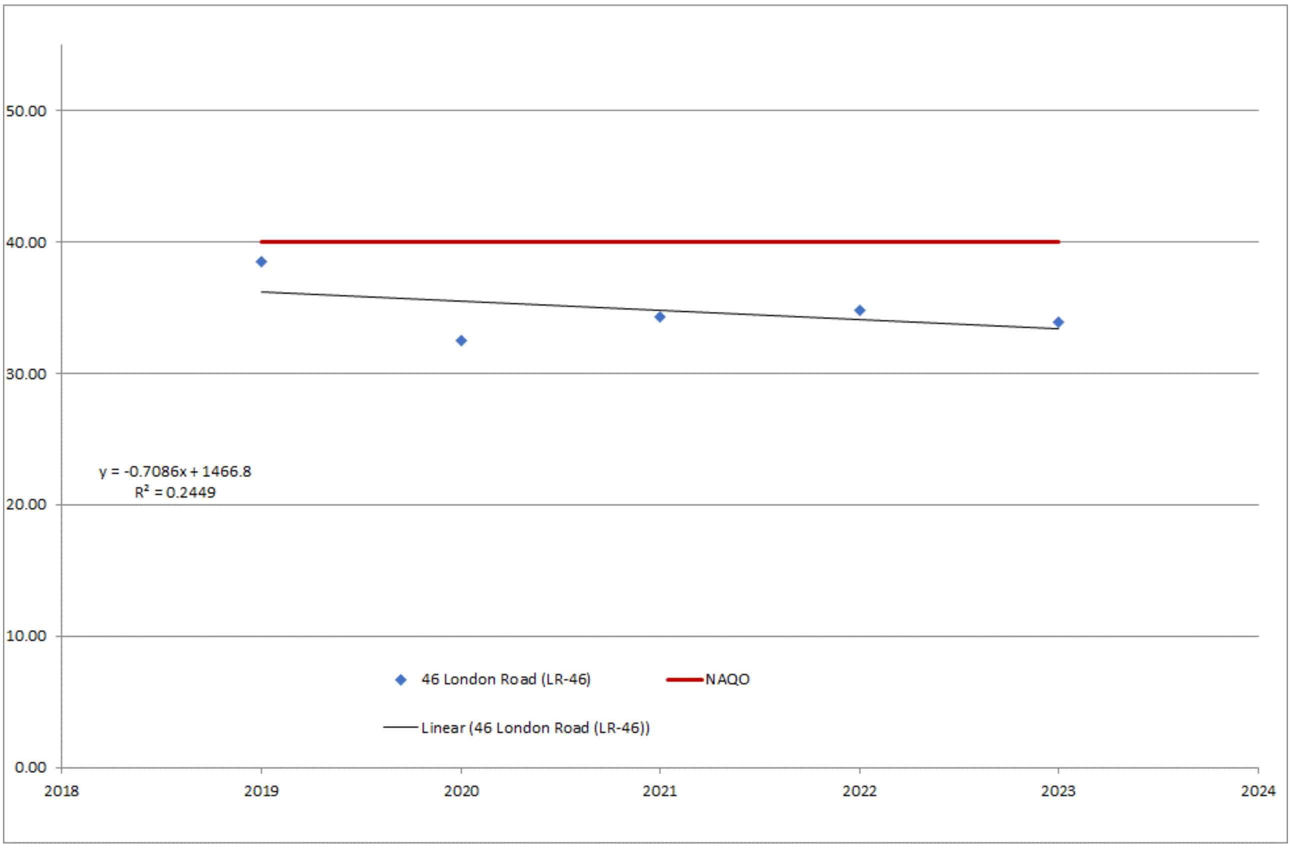


Figure F.102: 47 London Road (LR-47)

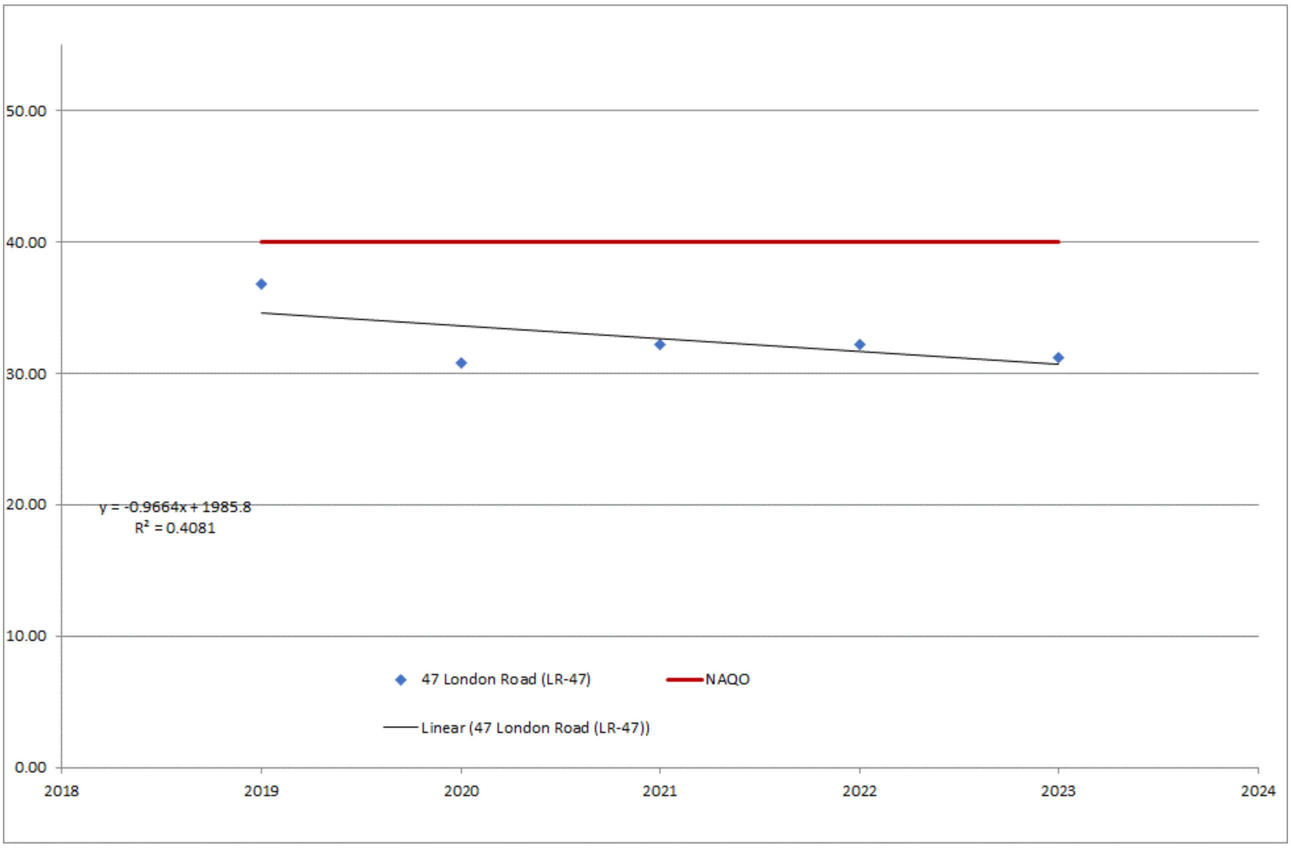


Figure F.103: Hillsley Road Column 23 (HR-Col23)

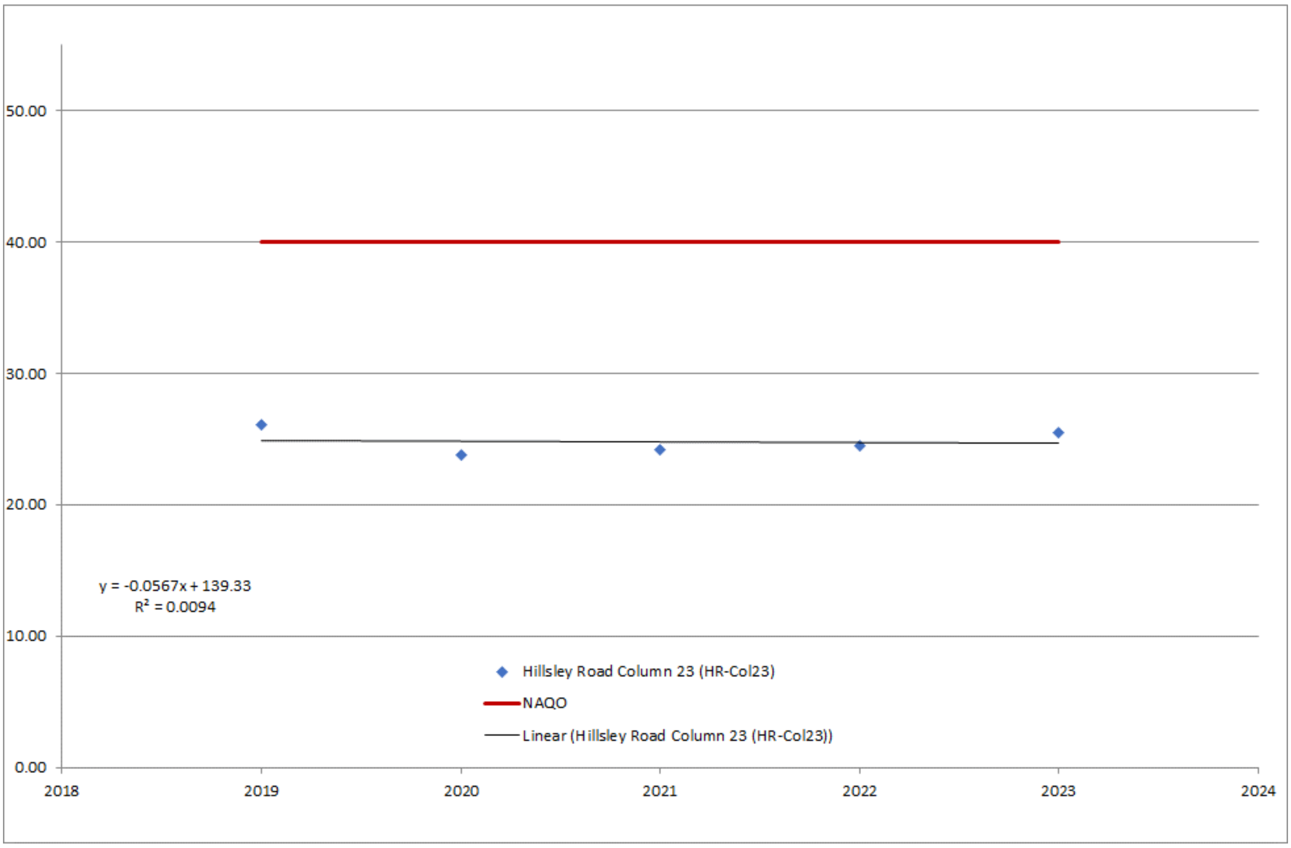


Figure F.104: 7 Tudor Crescent (TC-7)

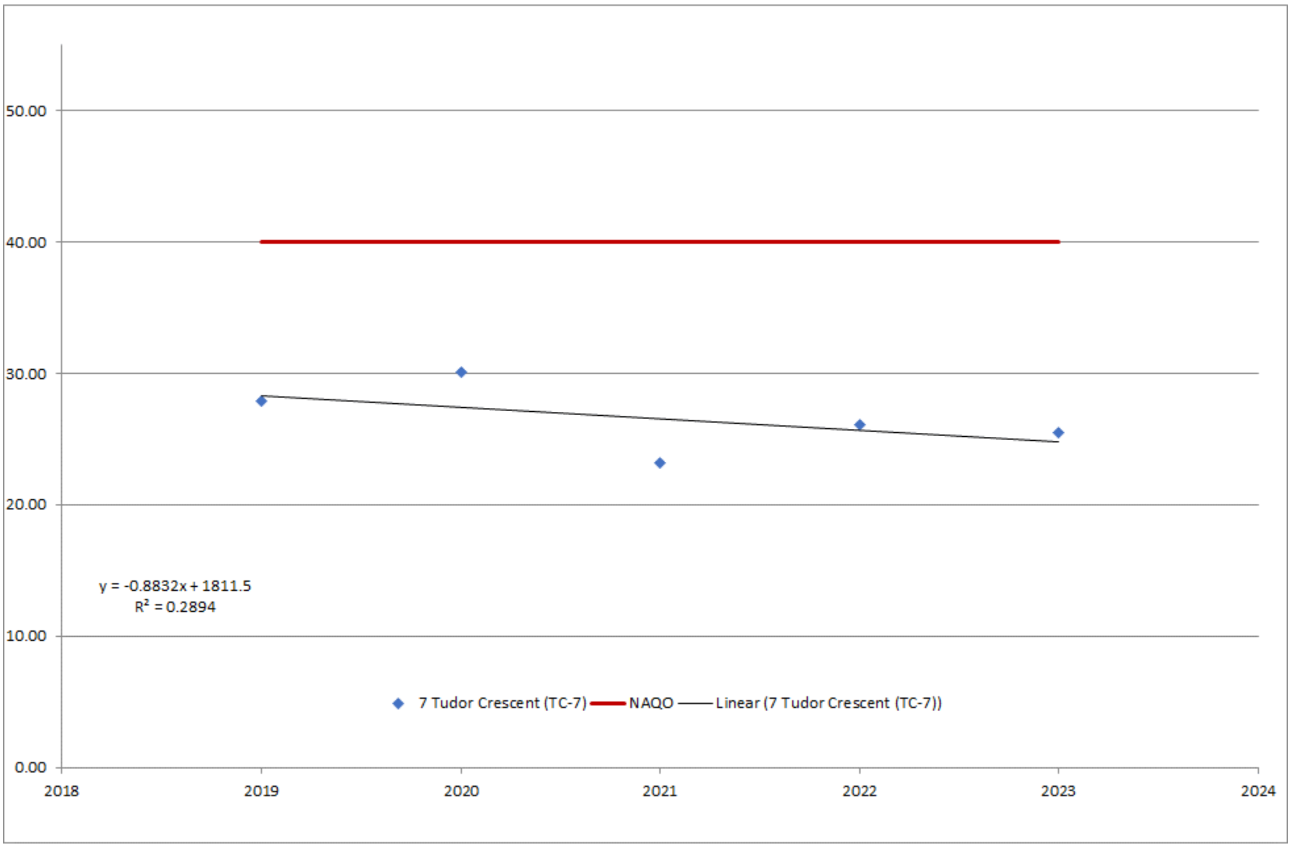


Figure F.105: Ports Way Column 32 (PW-Col32)

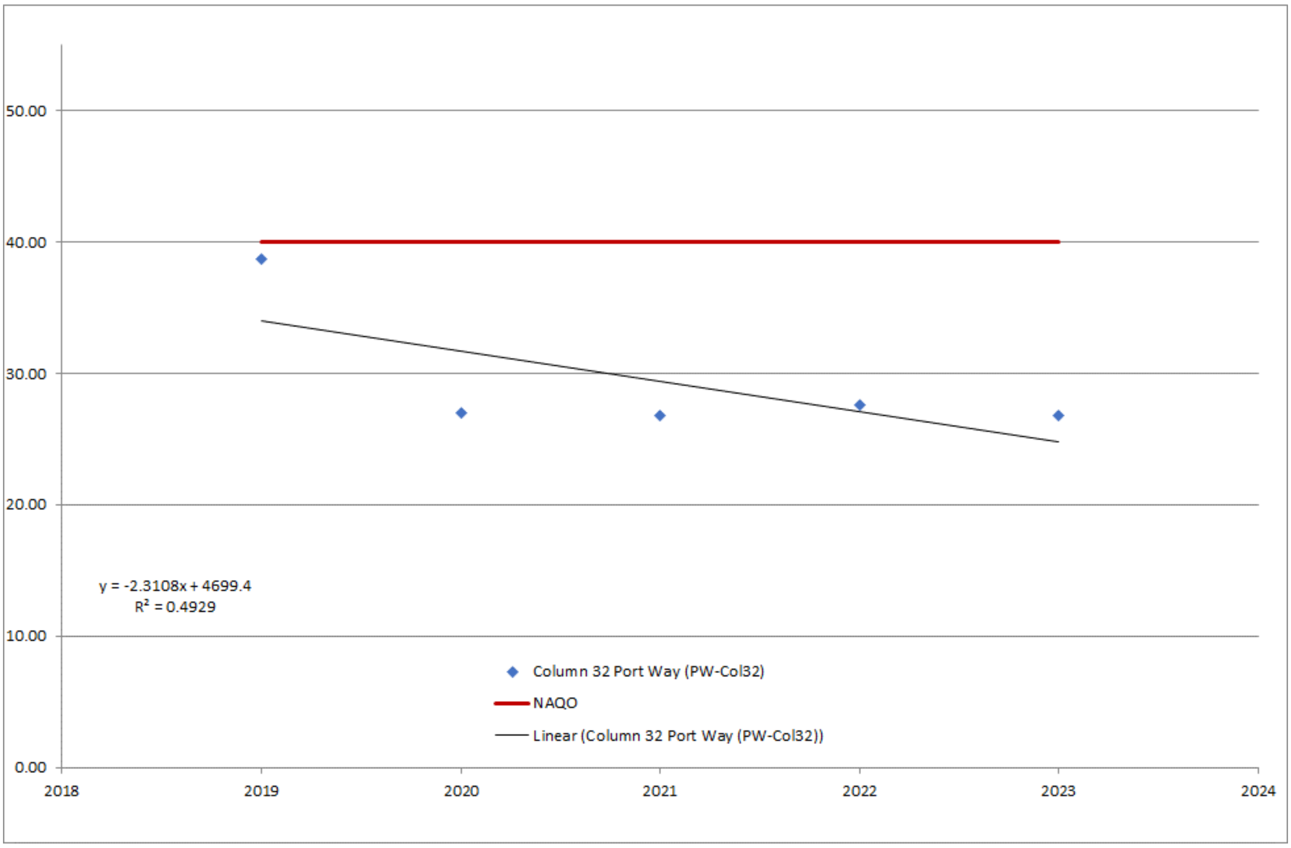


Figure F.106: 133 Southampton Road (SR-133)

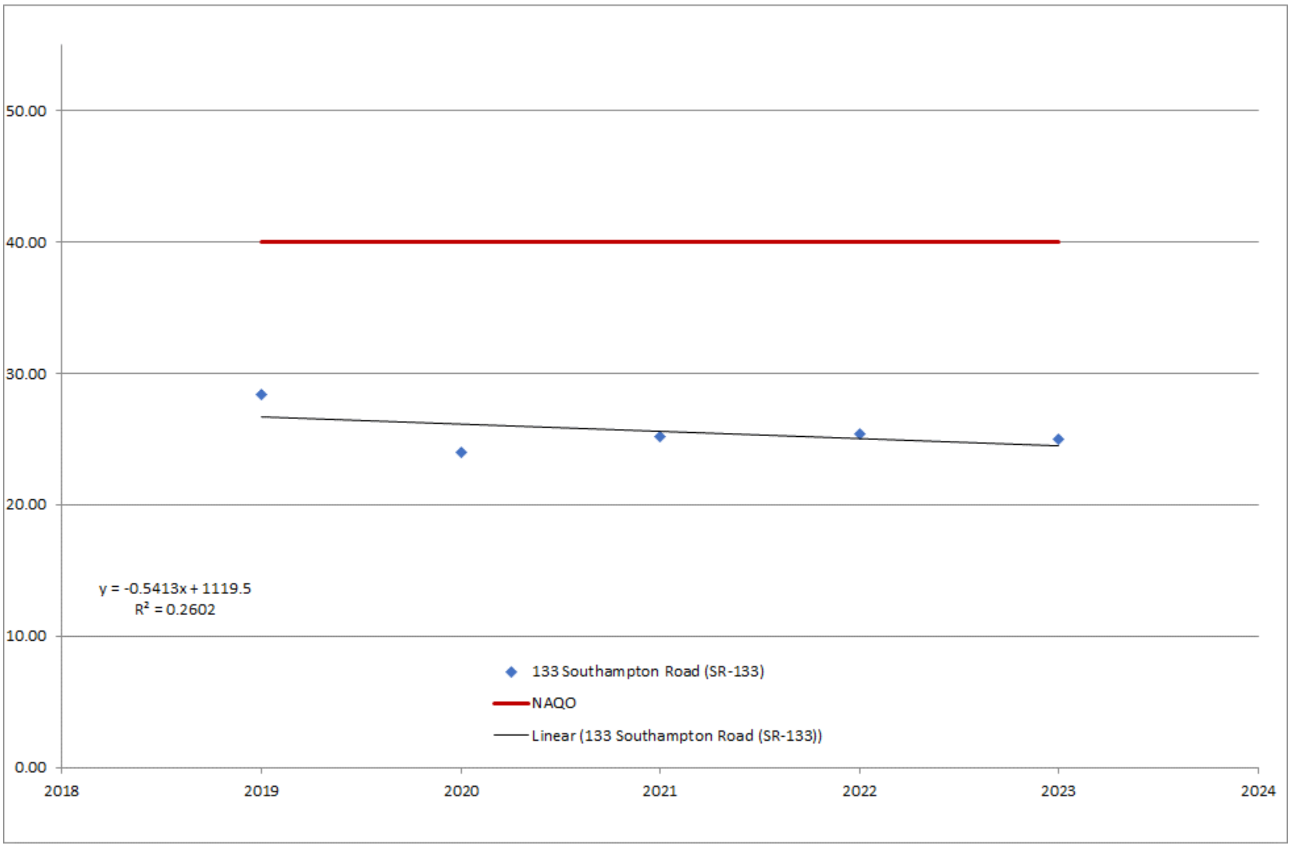


Figure F.107: 47 Derby Road (DR-47)

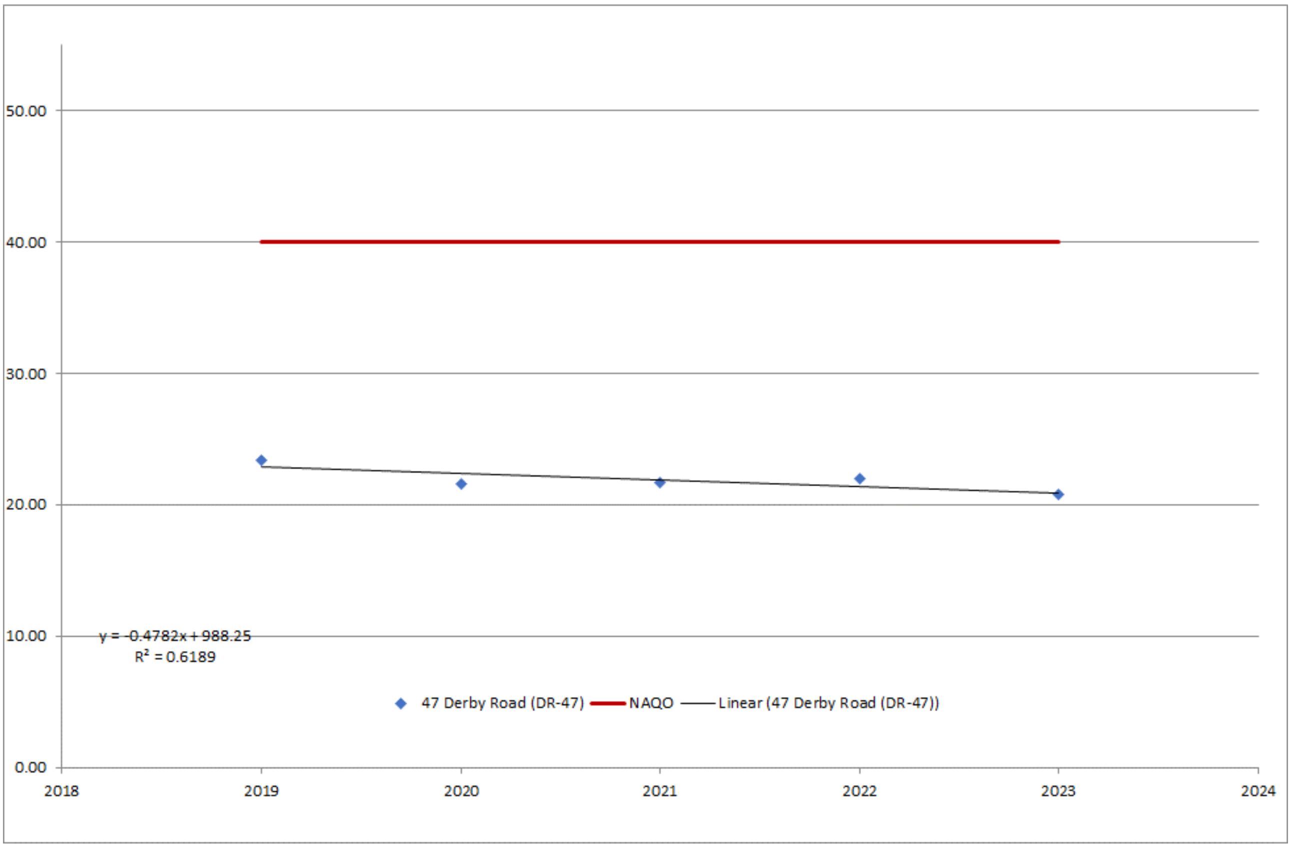


Figure F.108: 50 Derby Road (DR-50)

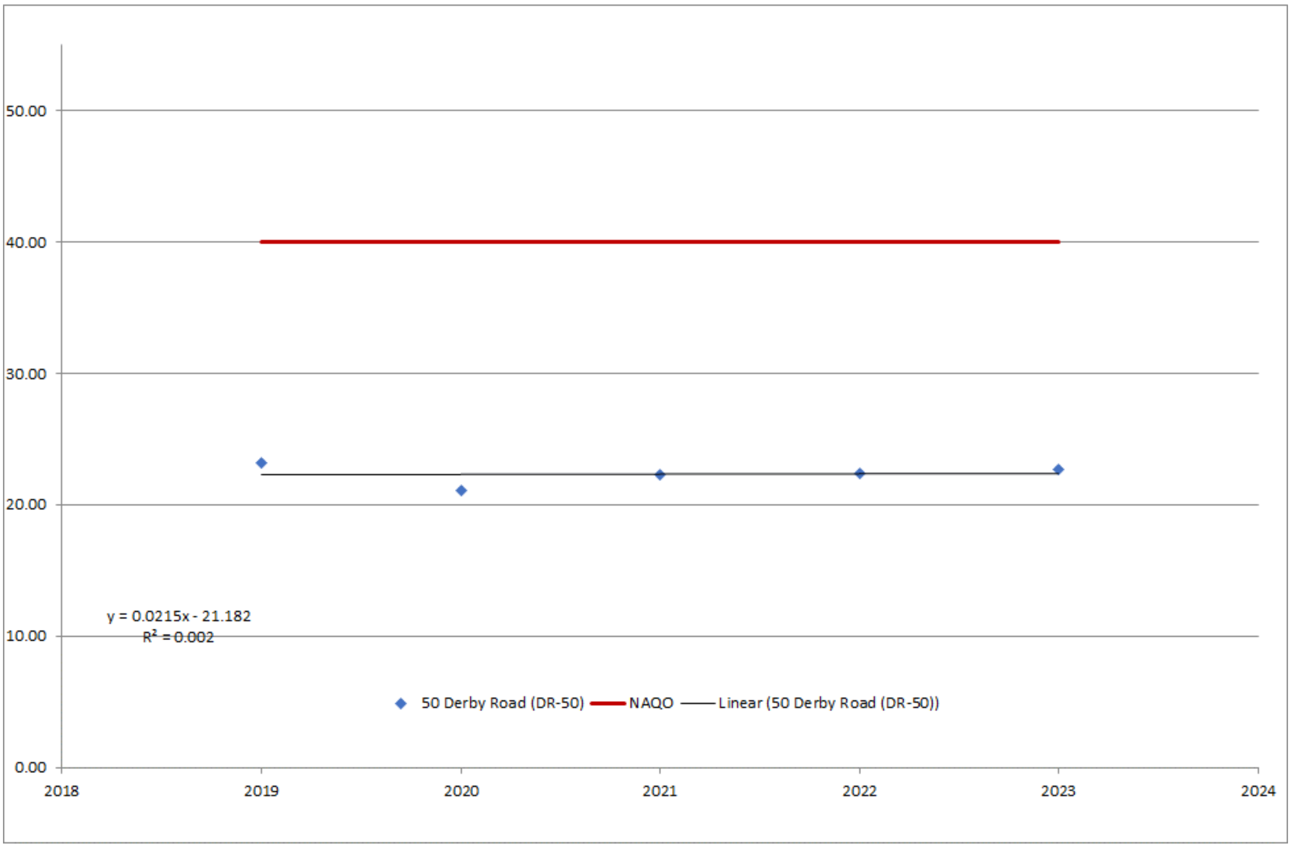


Figure F.109: 120 London Road (LR-120)

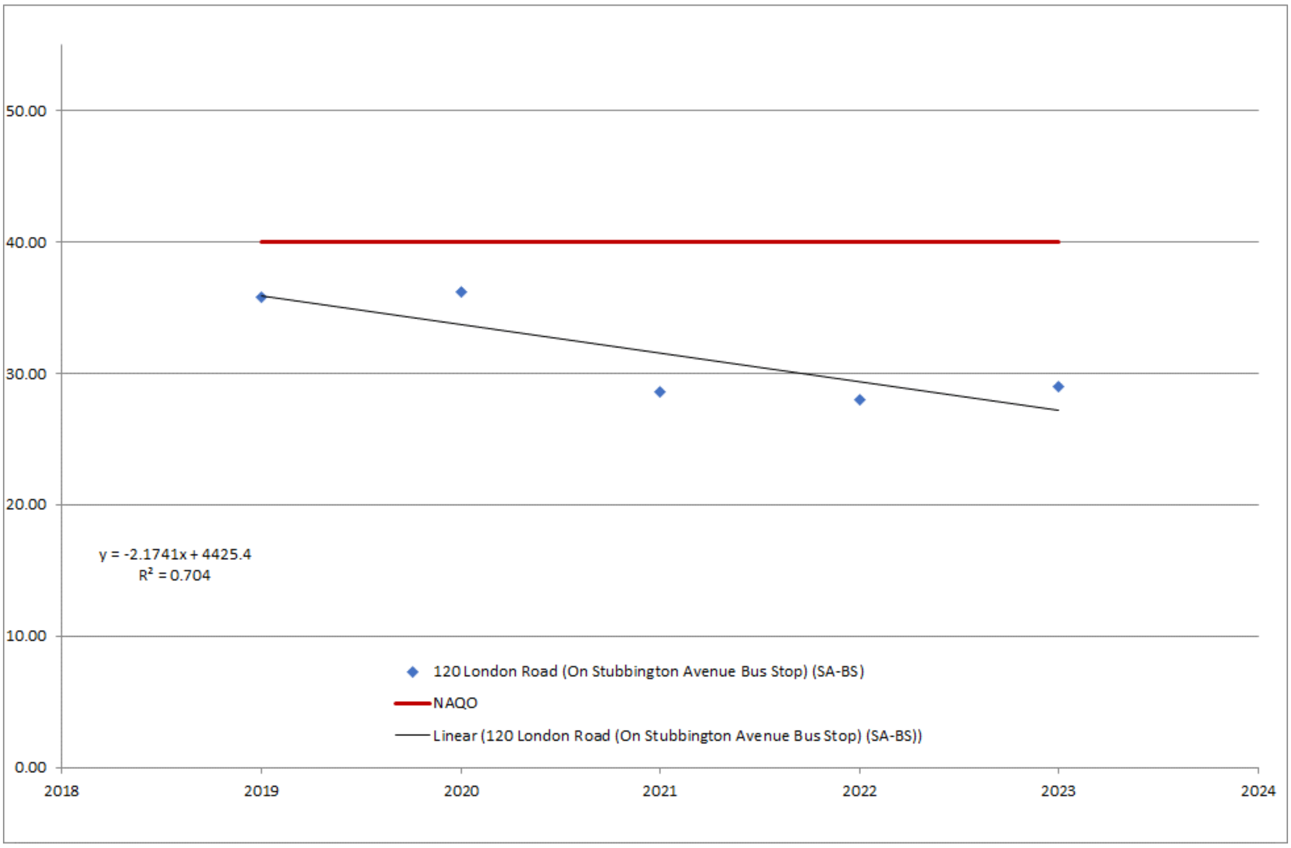


Figure F.110: 16 London Road (LR-16)

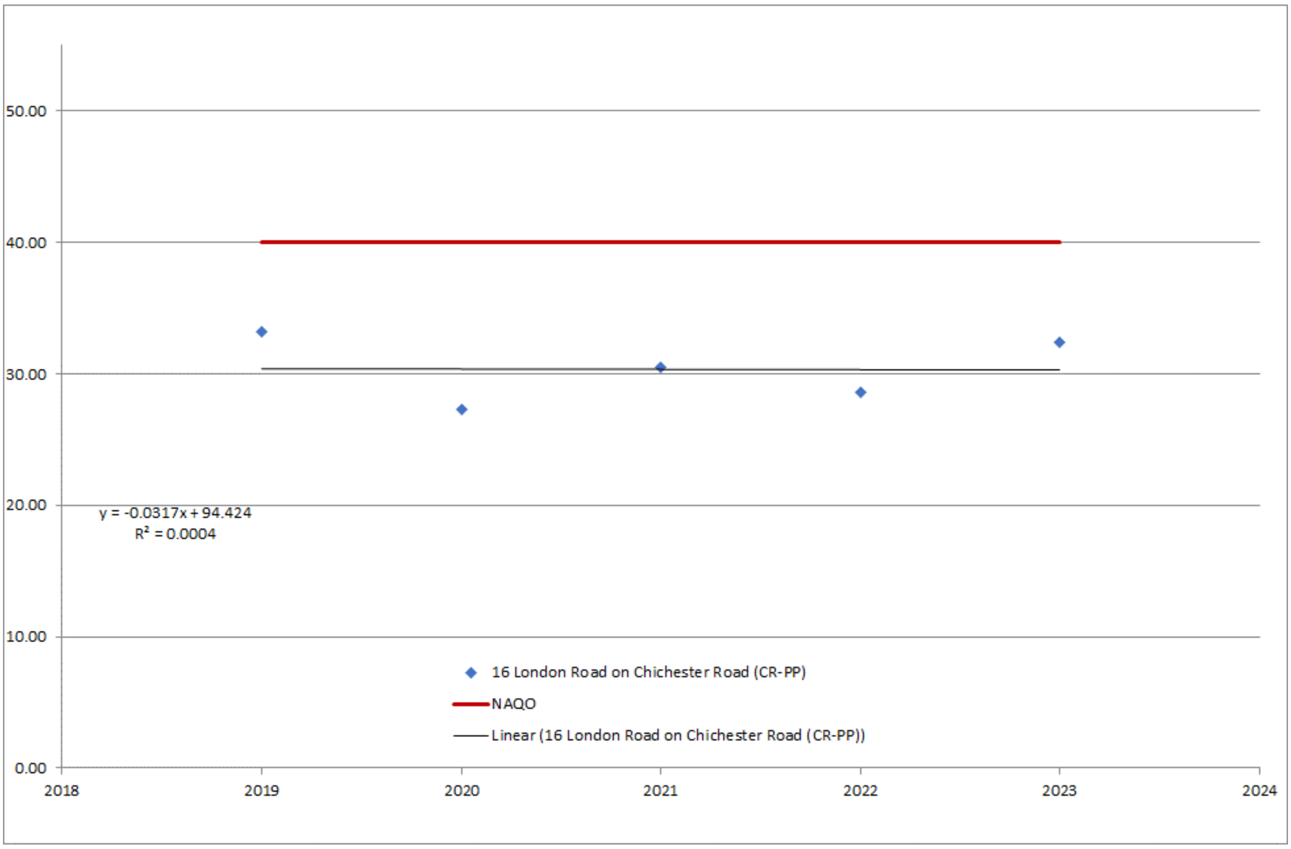


Figure F.111: Milton Road Column 50 (MR-Col50)

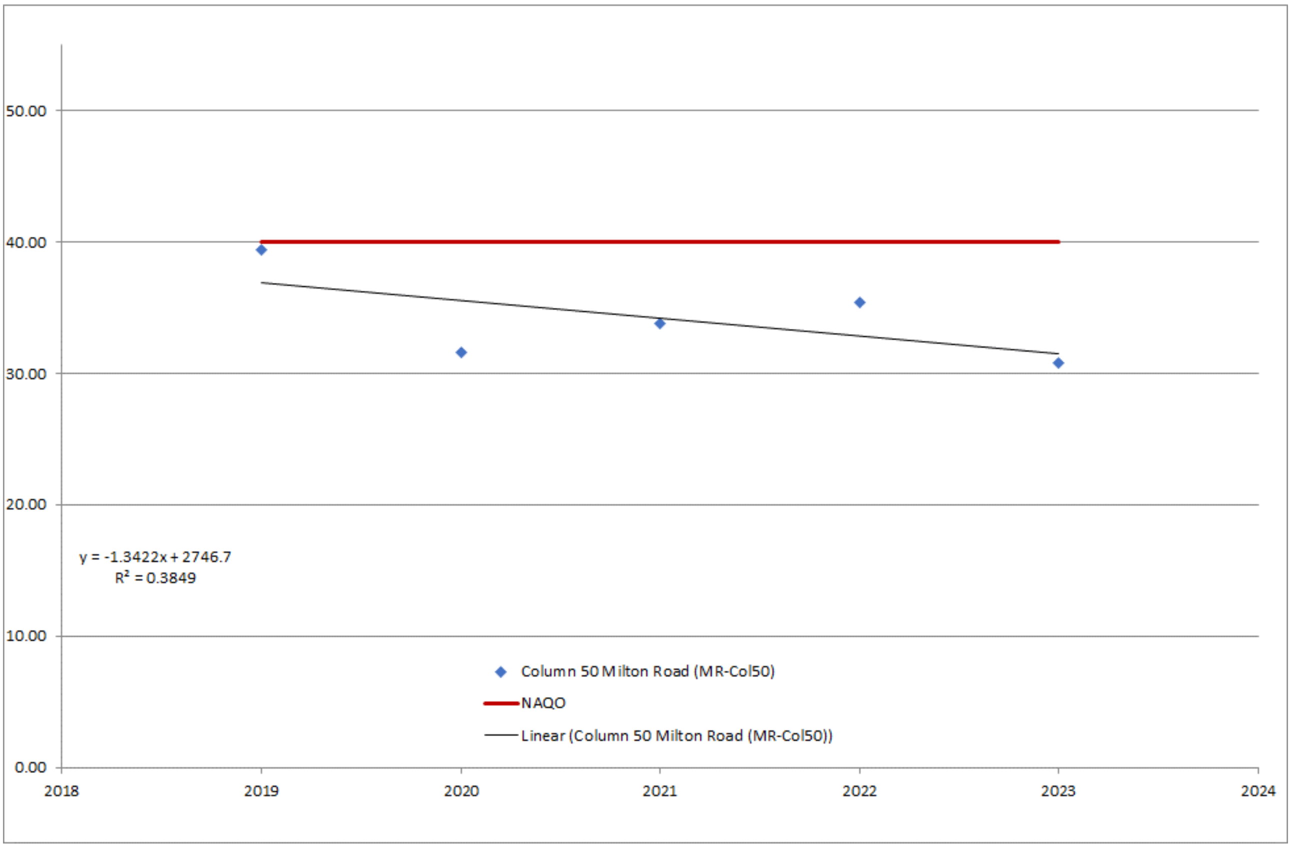


Figure F.112: Holbrook Road Labour Part Club (HR-LPC)

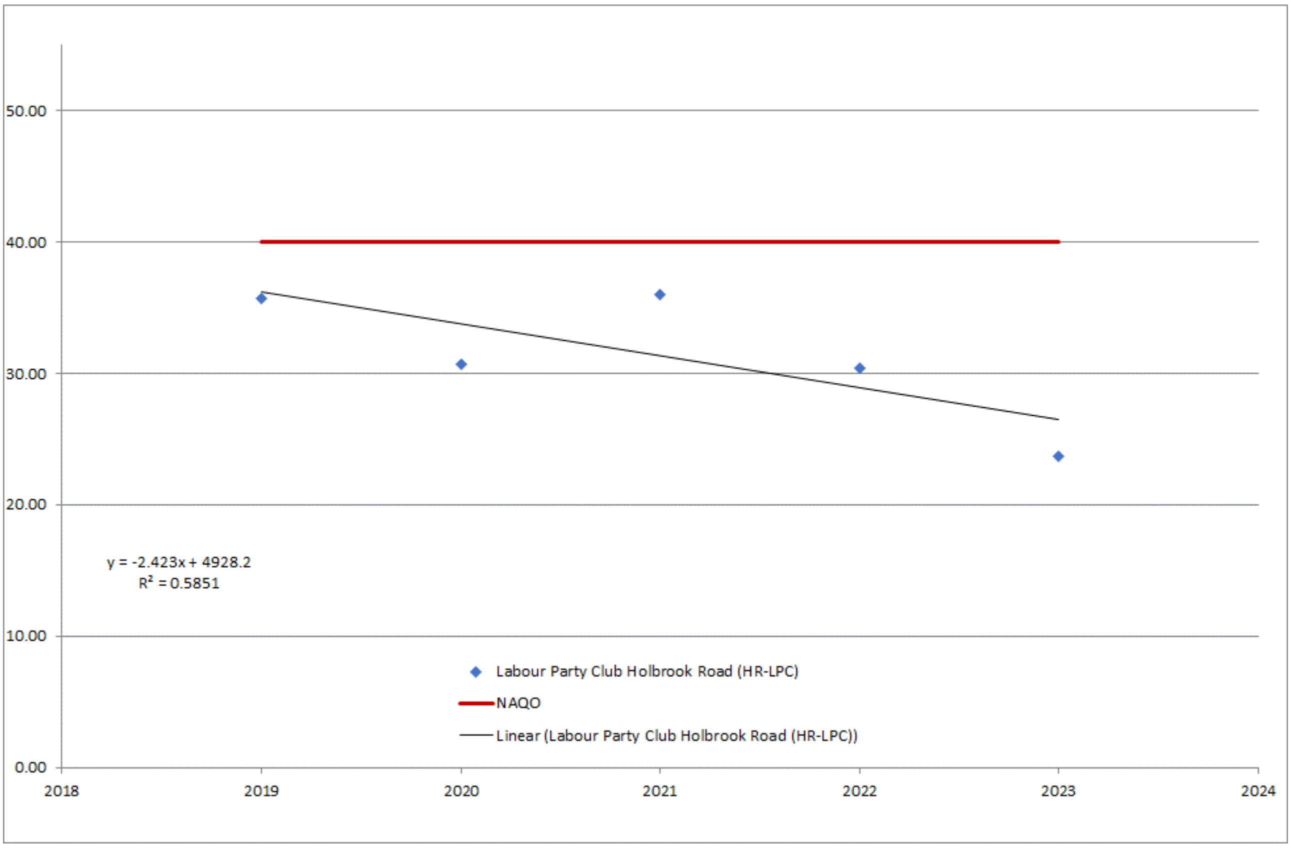


Figure F.113: Southampton Road North (SR-N)

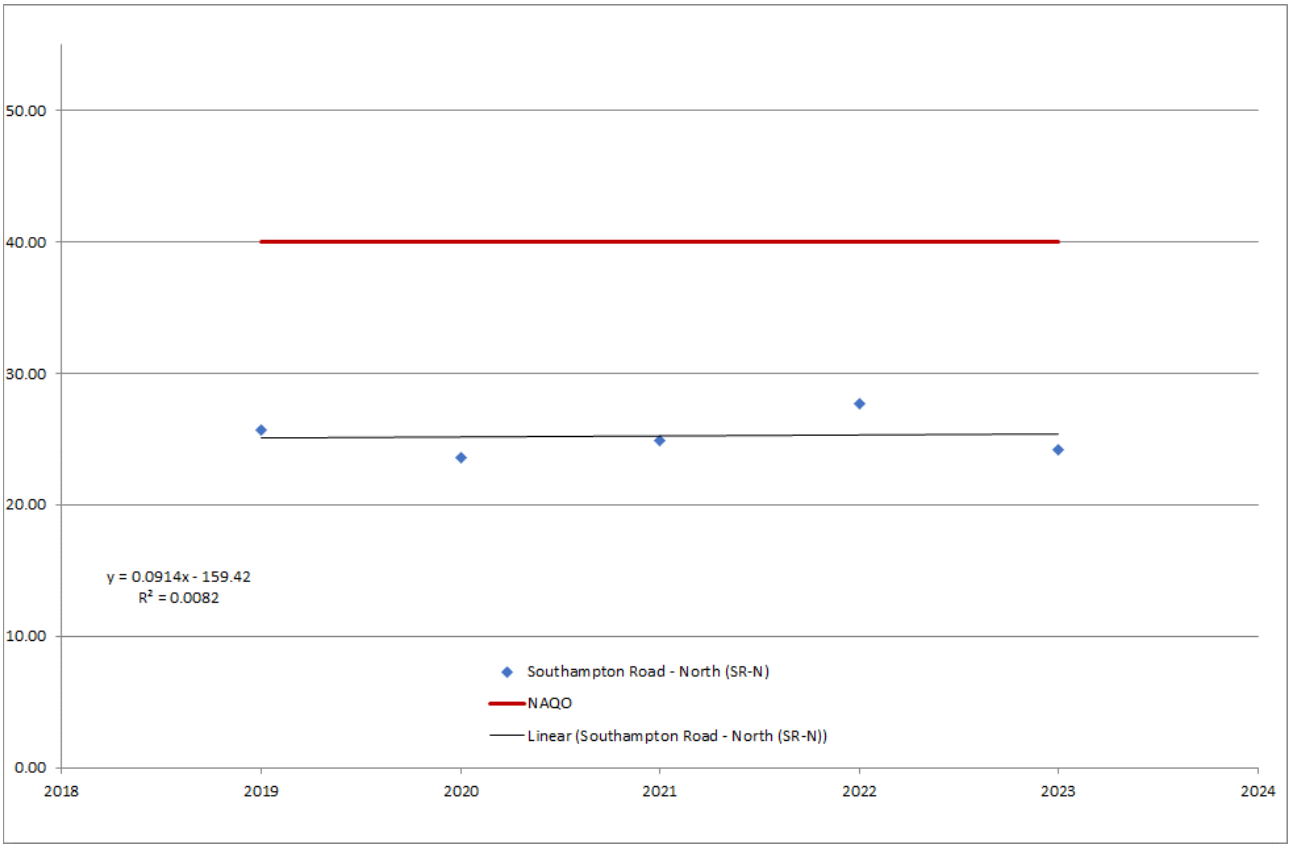


Figure F.114: Southampton Road South (SR-S)

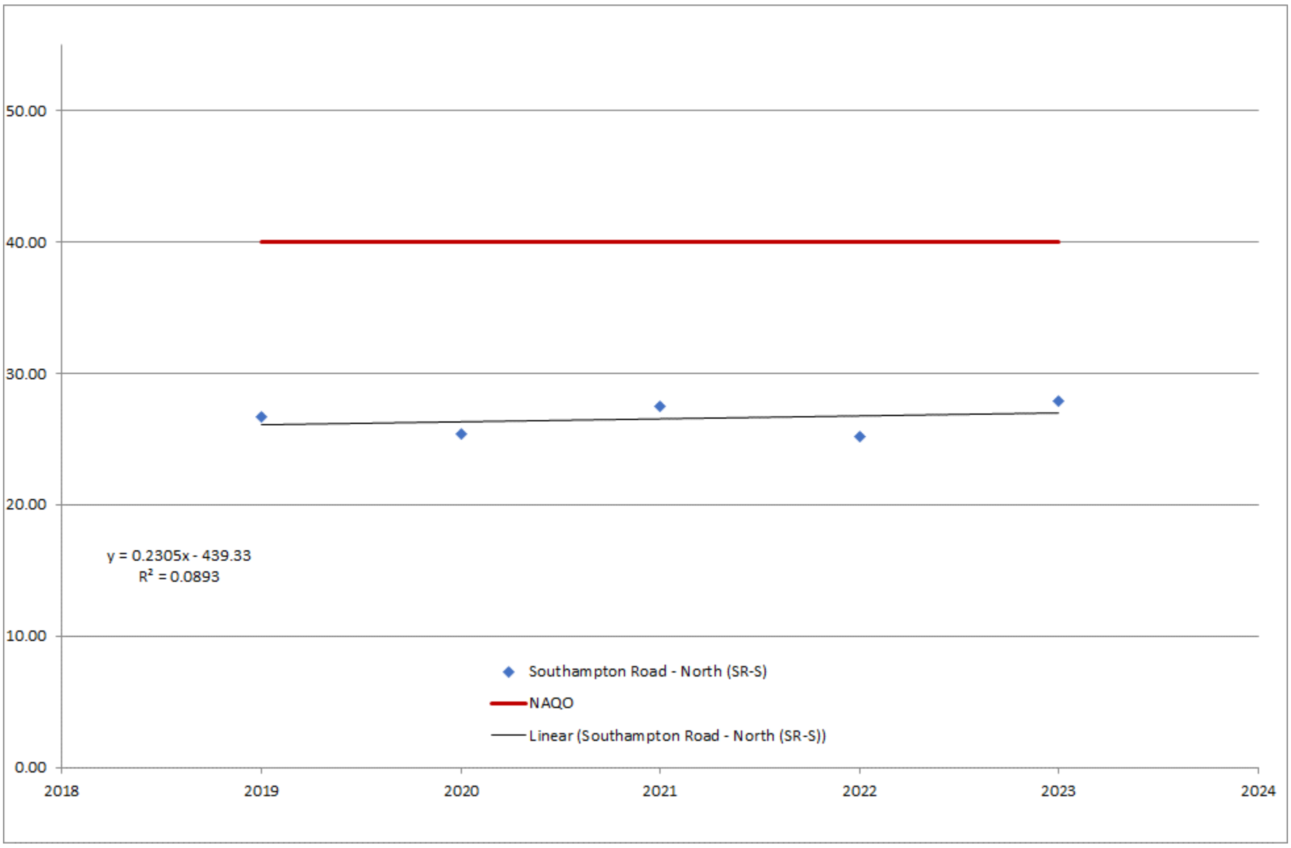


Figure F.115: Southampton Road Column 96 (SR-Col96)

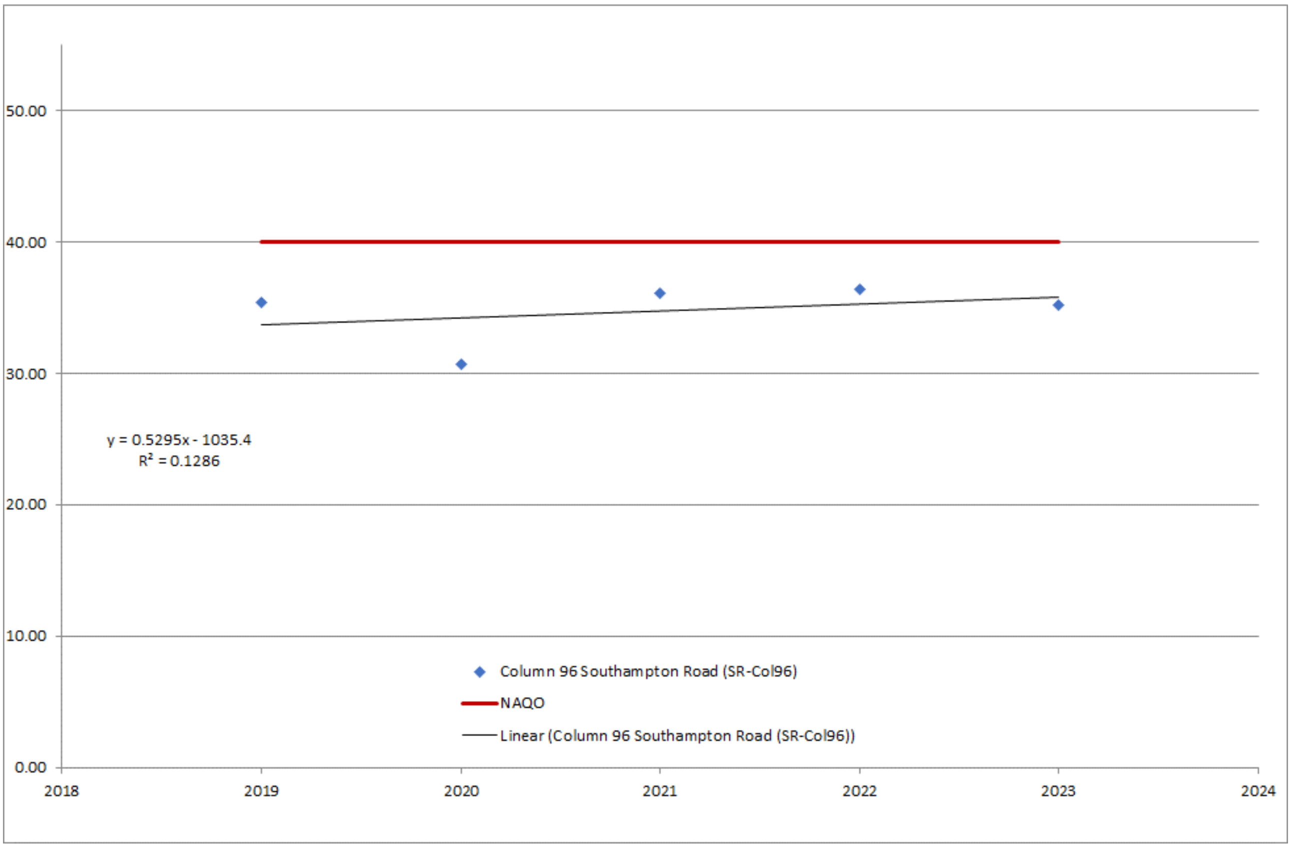


Figure F.116: Southampton Road Column 97 (SR-Col97)

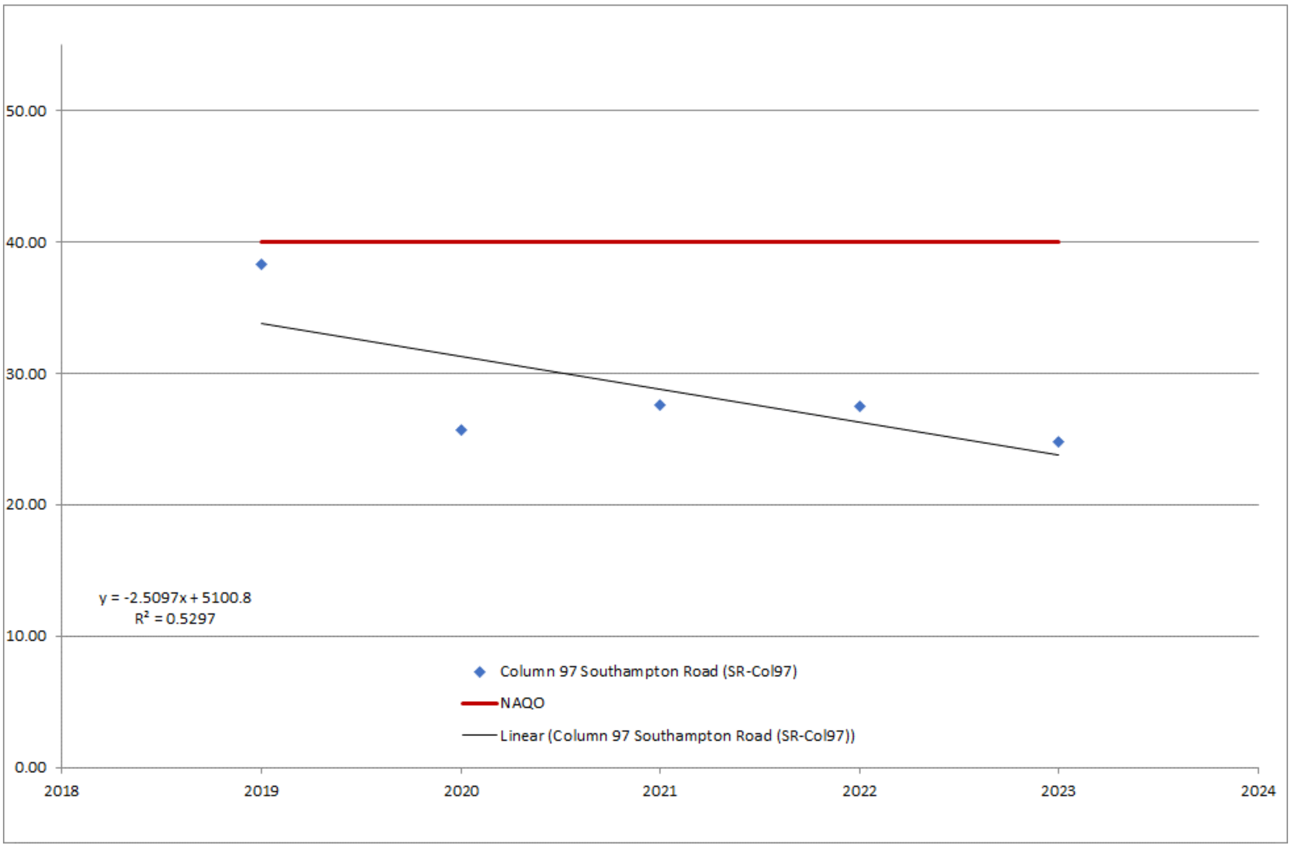


Figure F.117: Southampton Road Column 79 (SR-Col79)

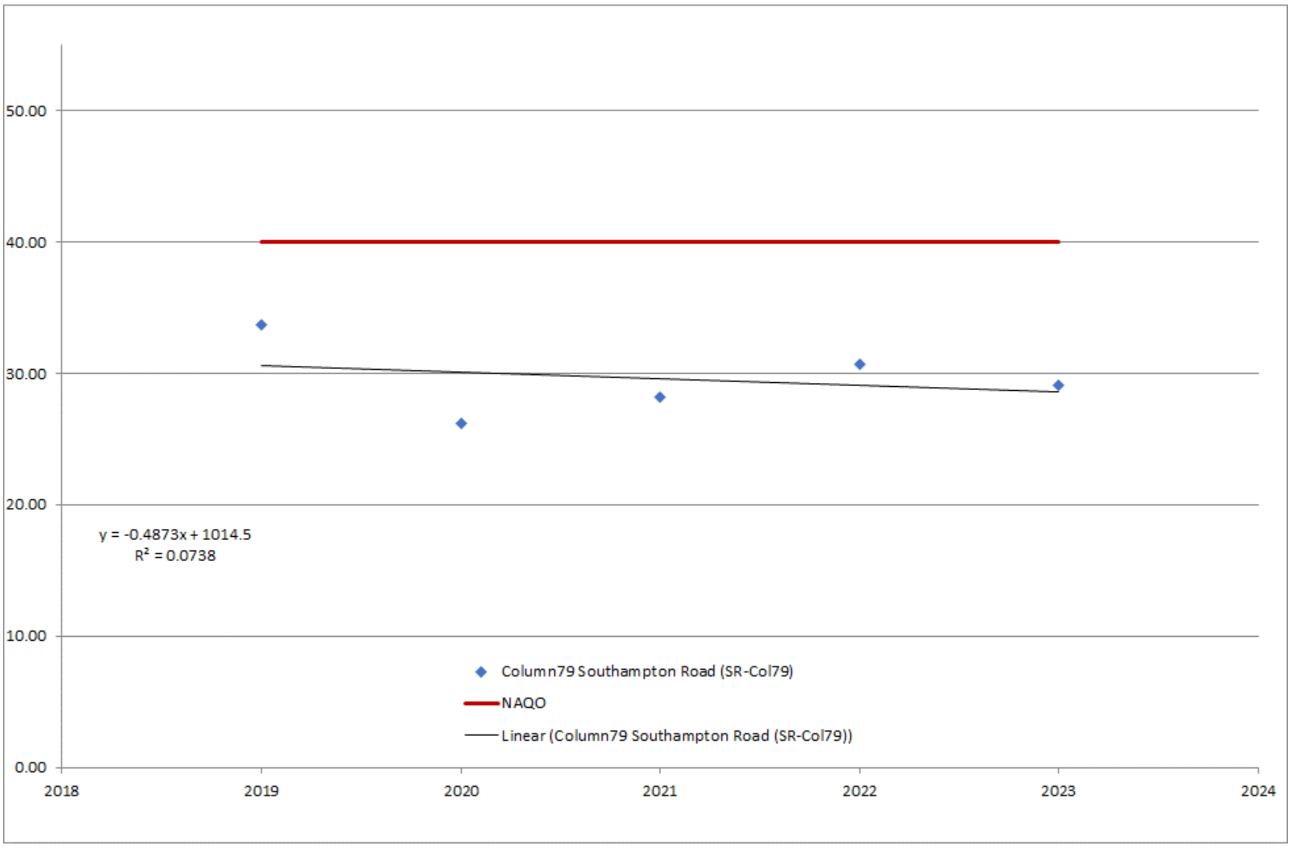


Figure F.118: 8 Old London Road (OLR-8)

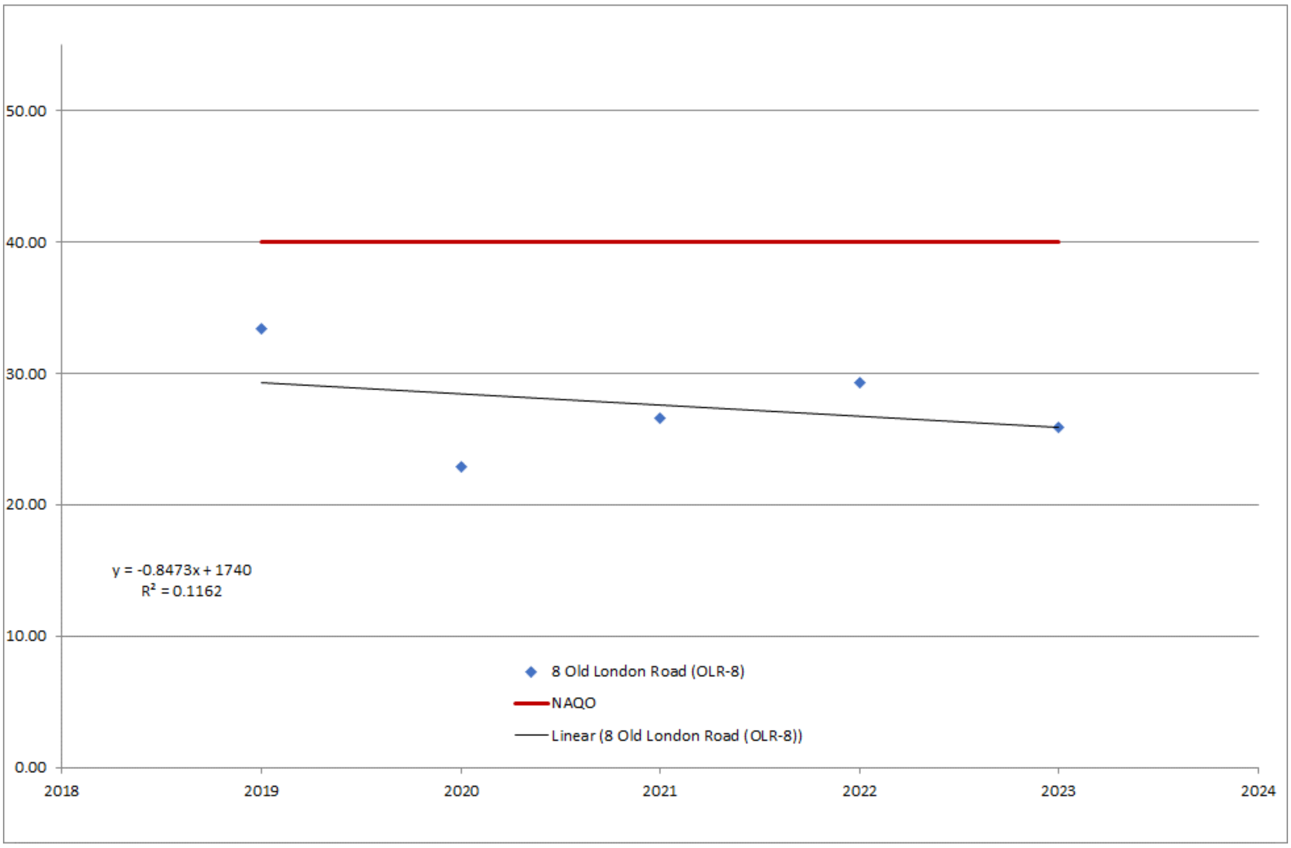


Figure F.119: Old London RoadColumn 3 (OLR-Col3)

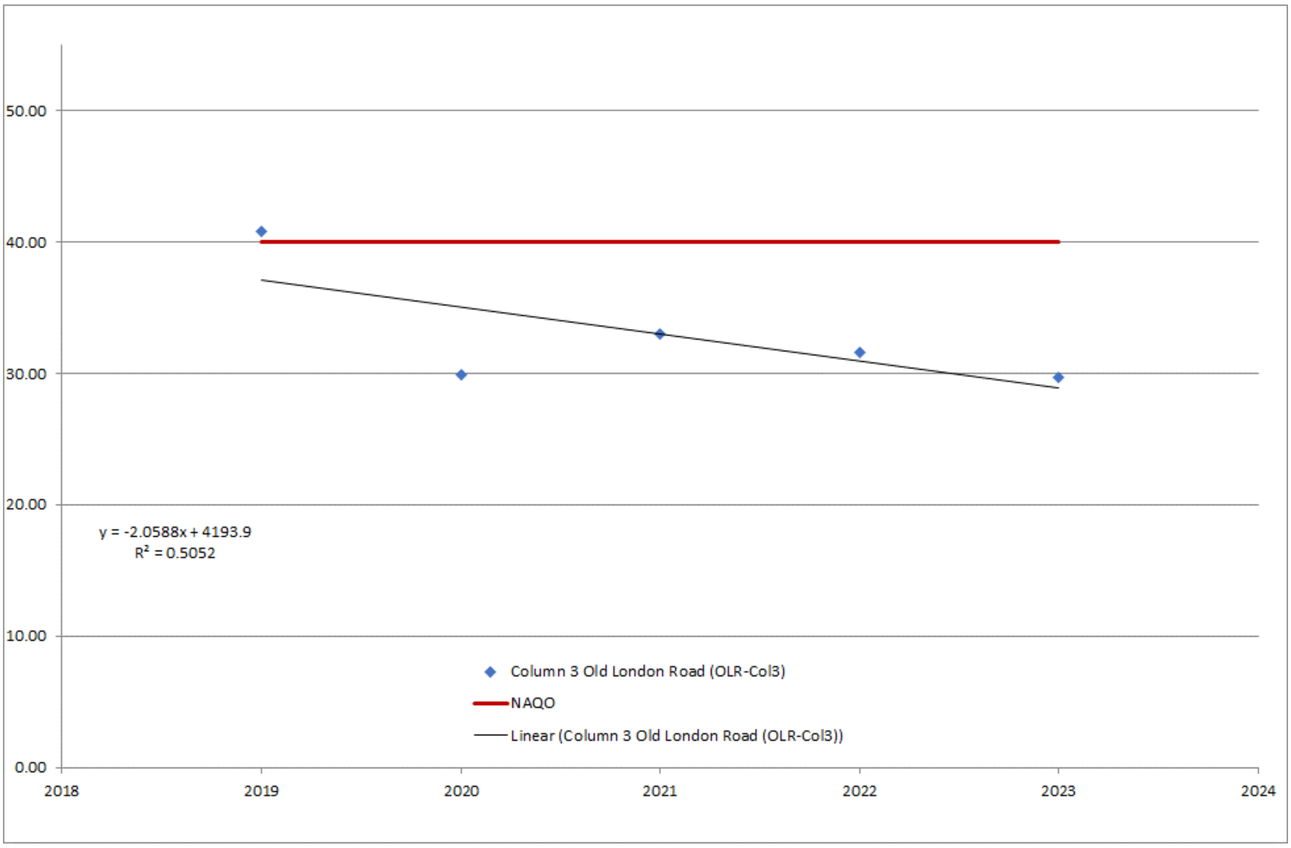


Figure F.120: Sevenoaks Road Column 1 (SOR-Col1)

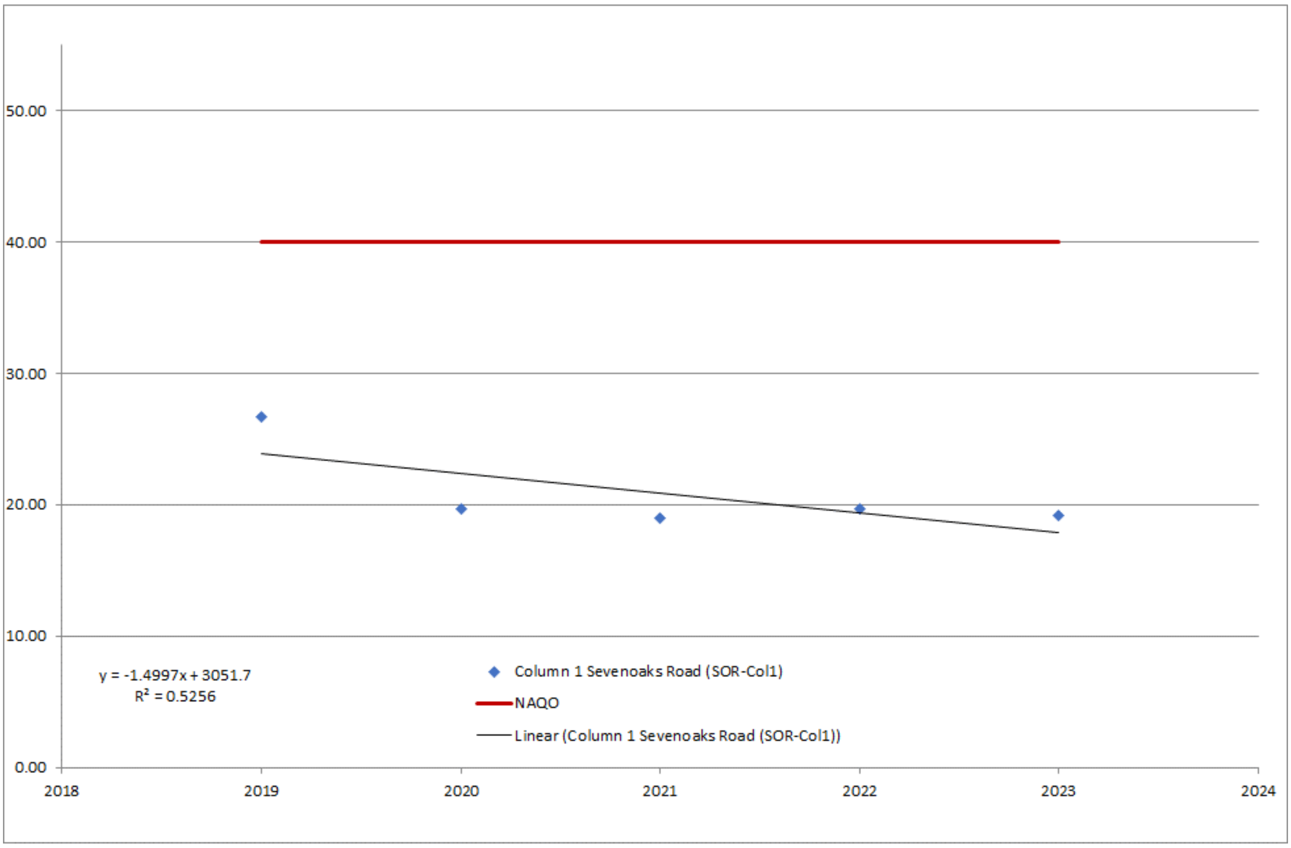


Figure F.121: Sevenoaks Road Column 4 (SR-Col4)

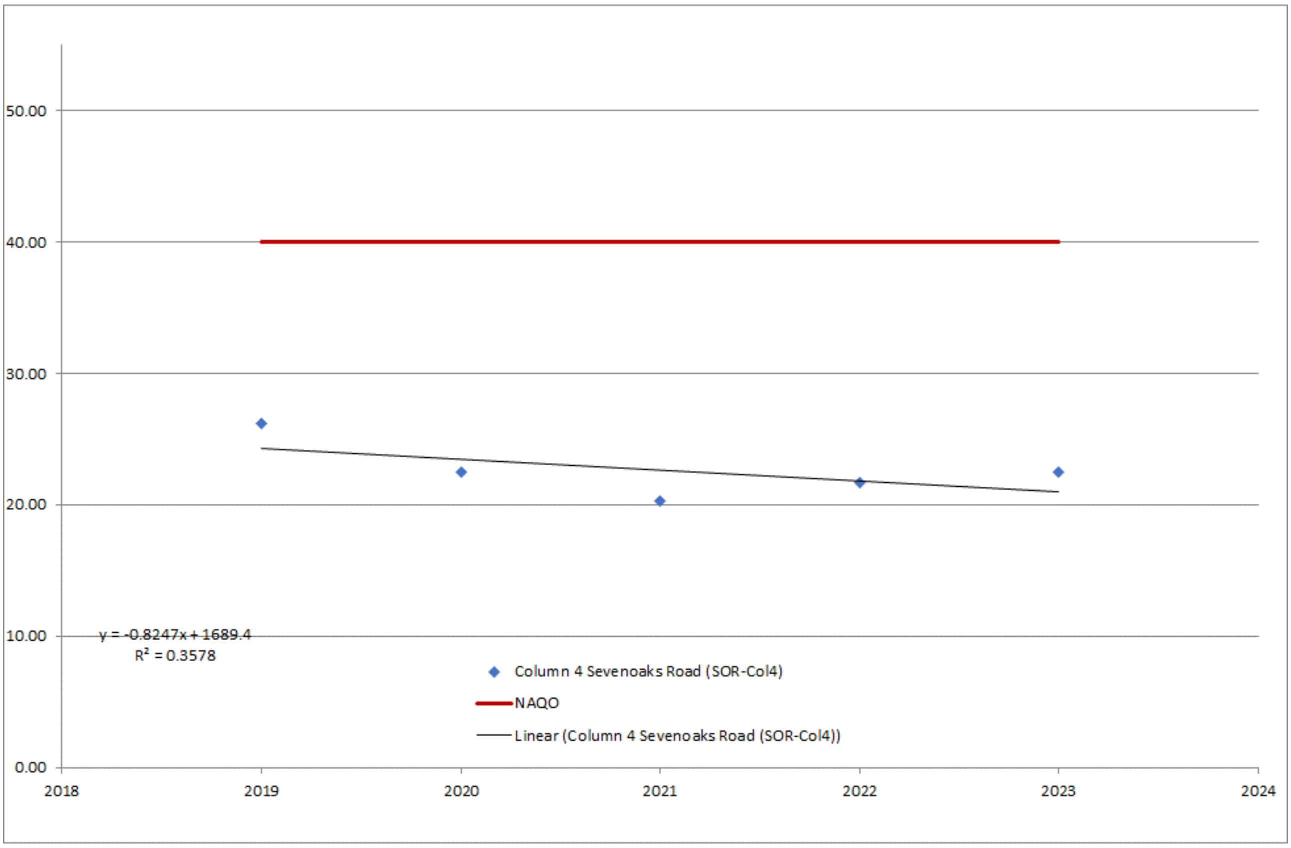


Figure F.122: Southampton Road Column 146 (SR-Col146)

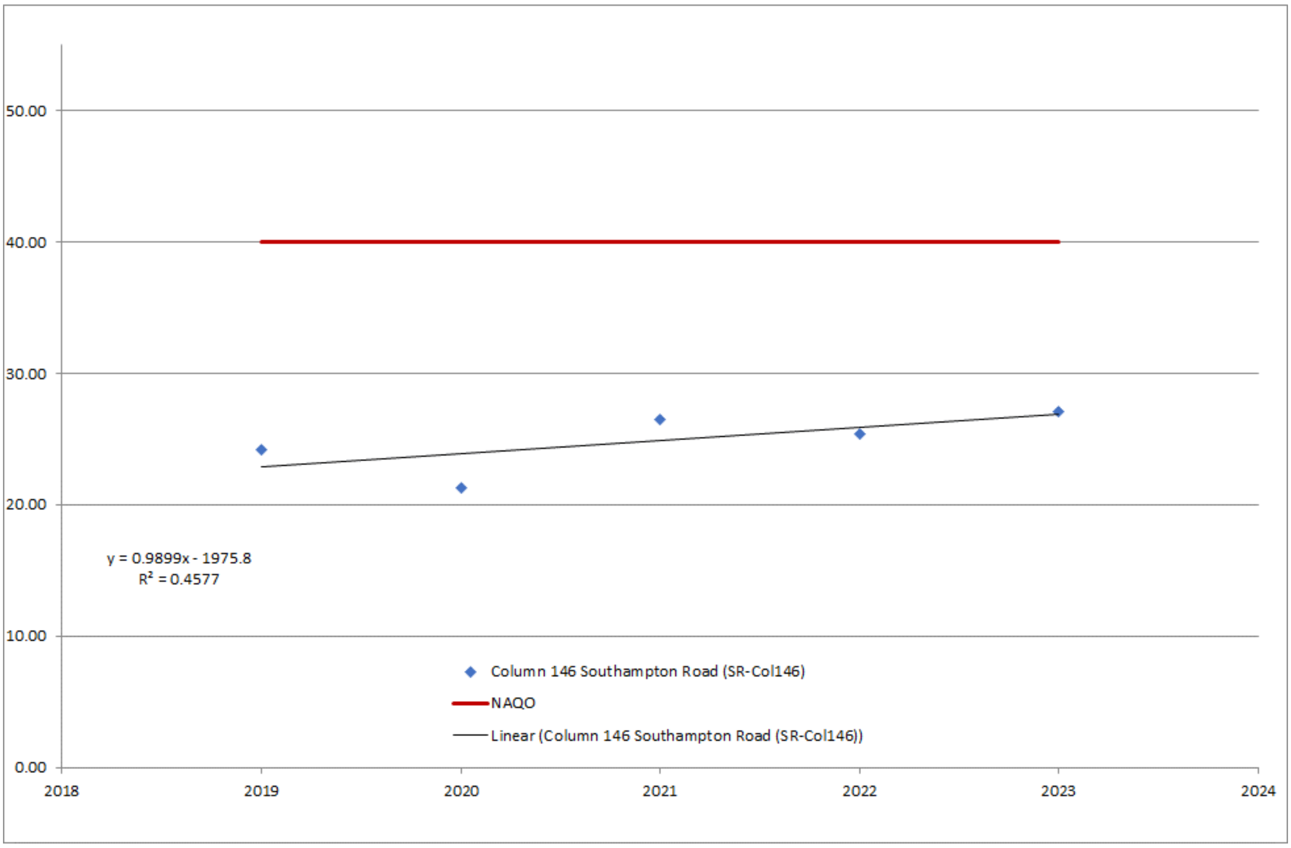


Figure F.123: Southampton Road Column147 (SR-Col147)

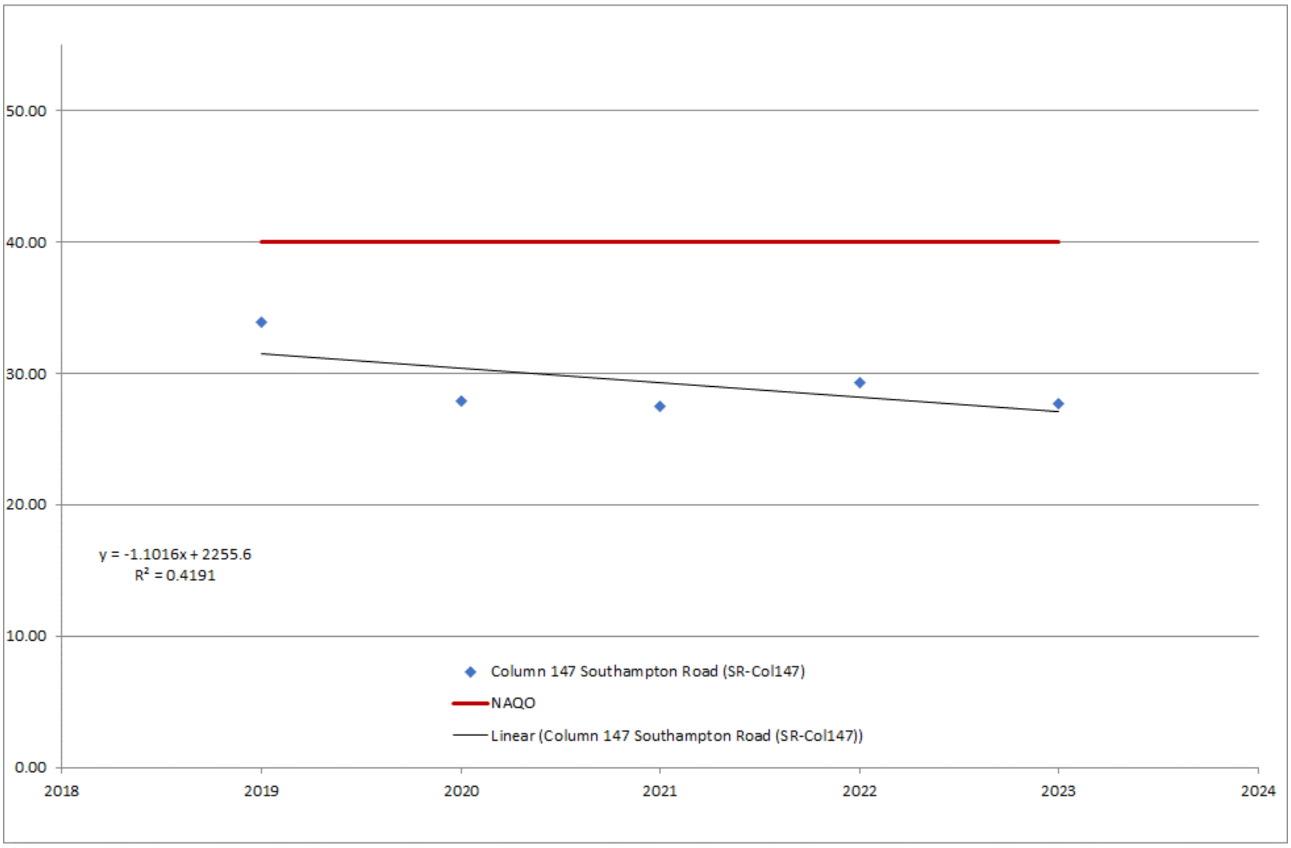


Figure F.124: Southampton Road Column154 (SR-Col154)

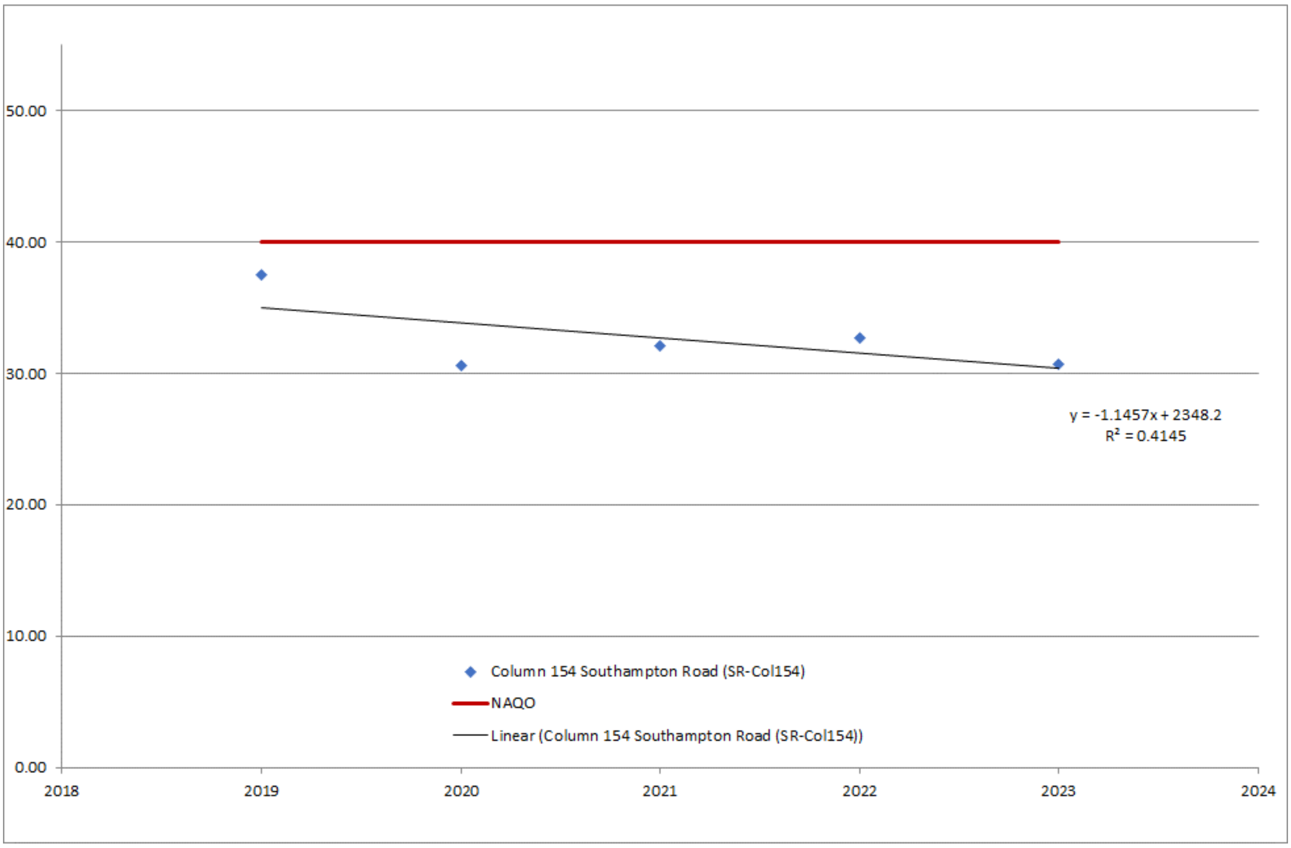


Figure F.125: Southampton Road Column155 (SR-Col155)

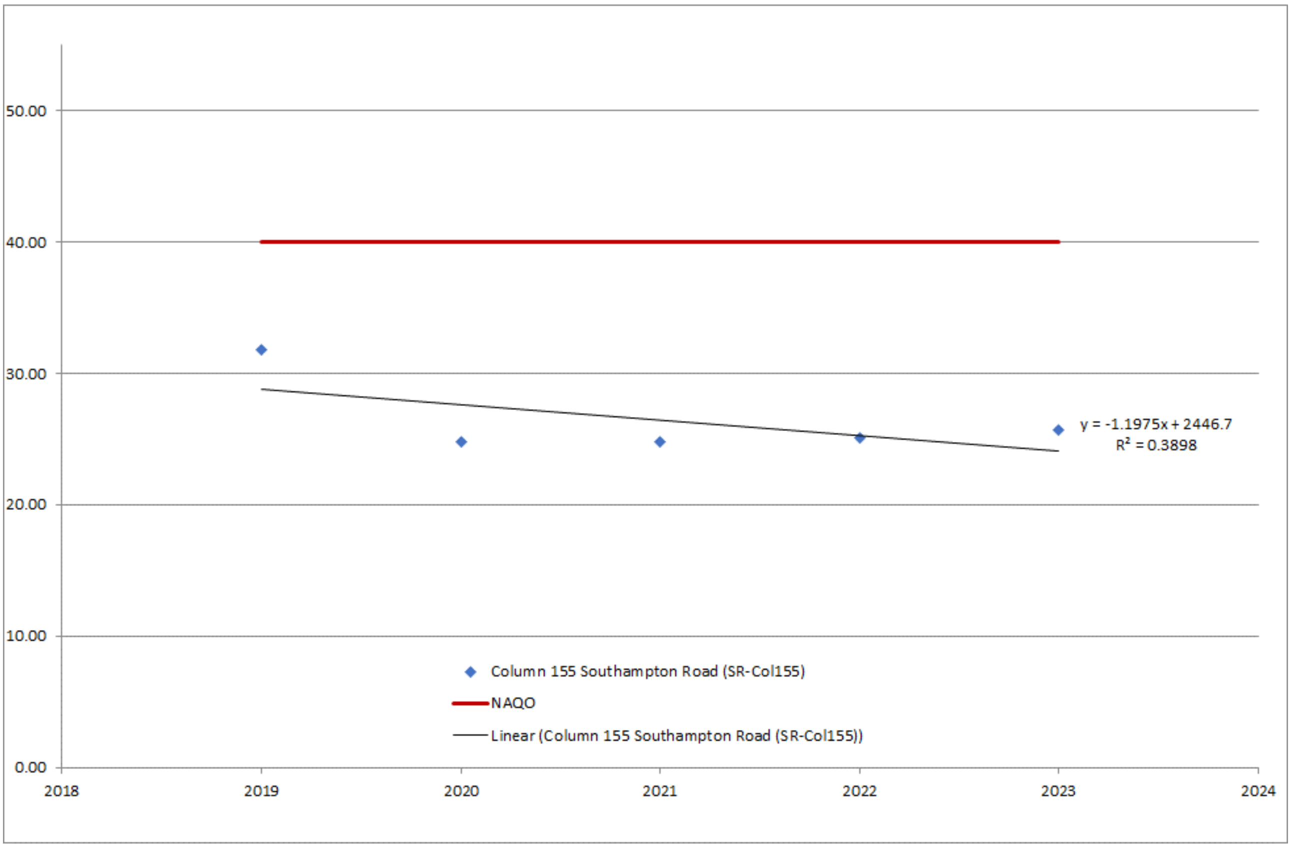


Figure F.126: Southampton Road Column 171 (SR-Col171)

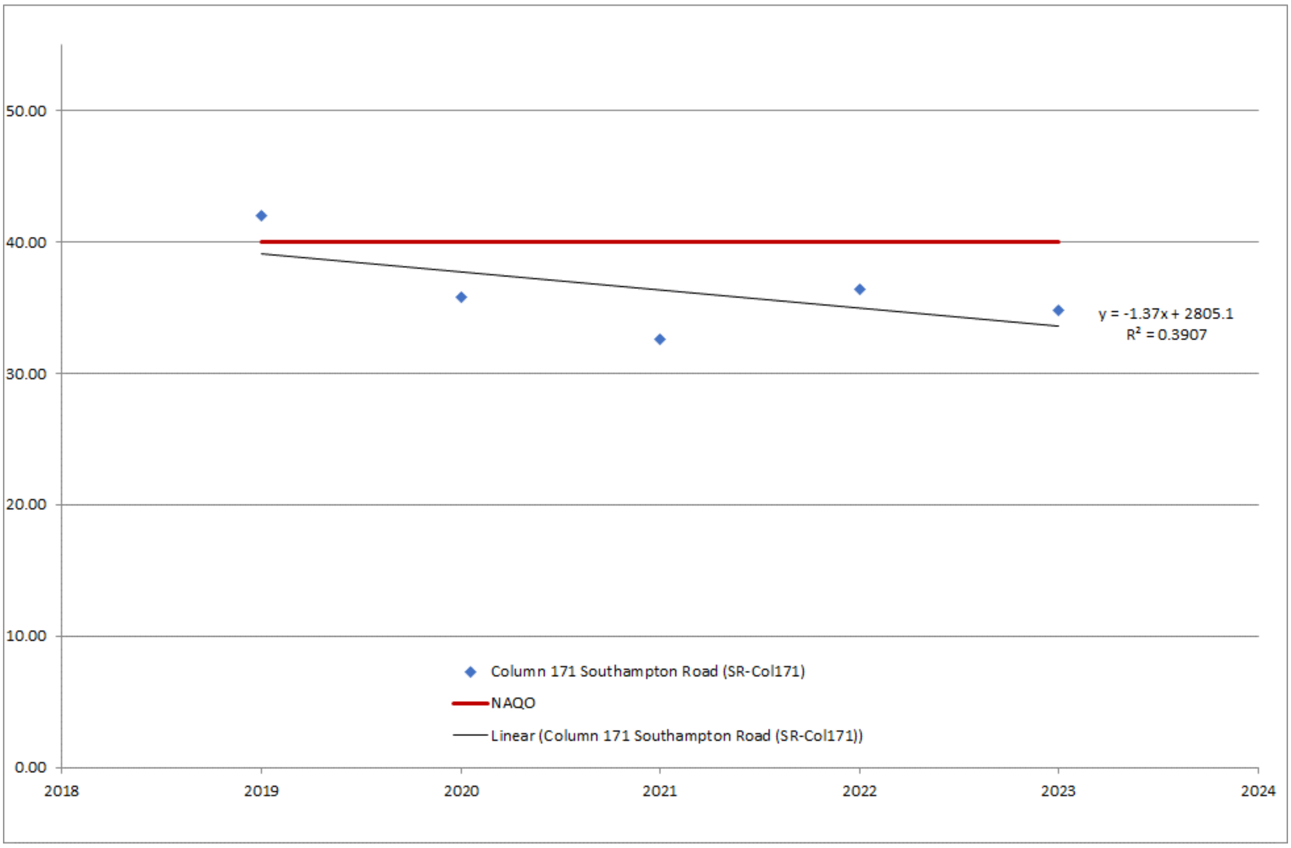


Figure F.127: Southampton Road Column 172 (SR-Col172)

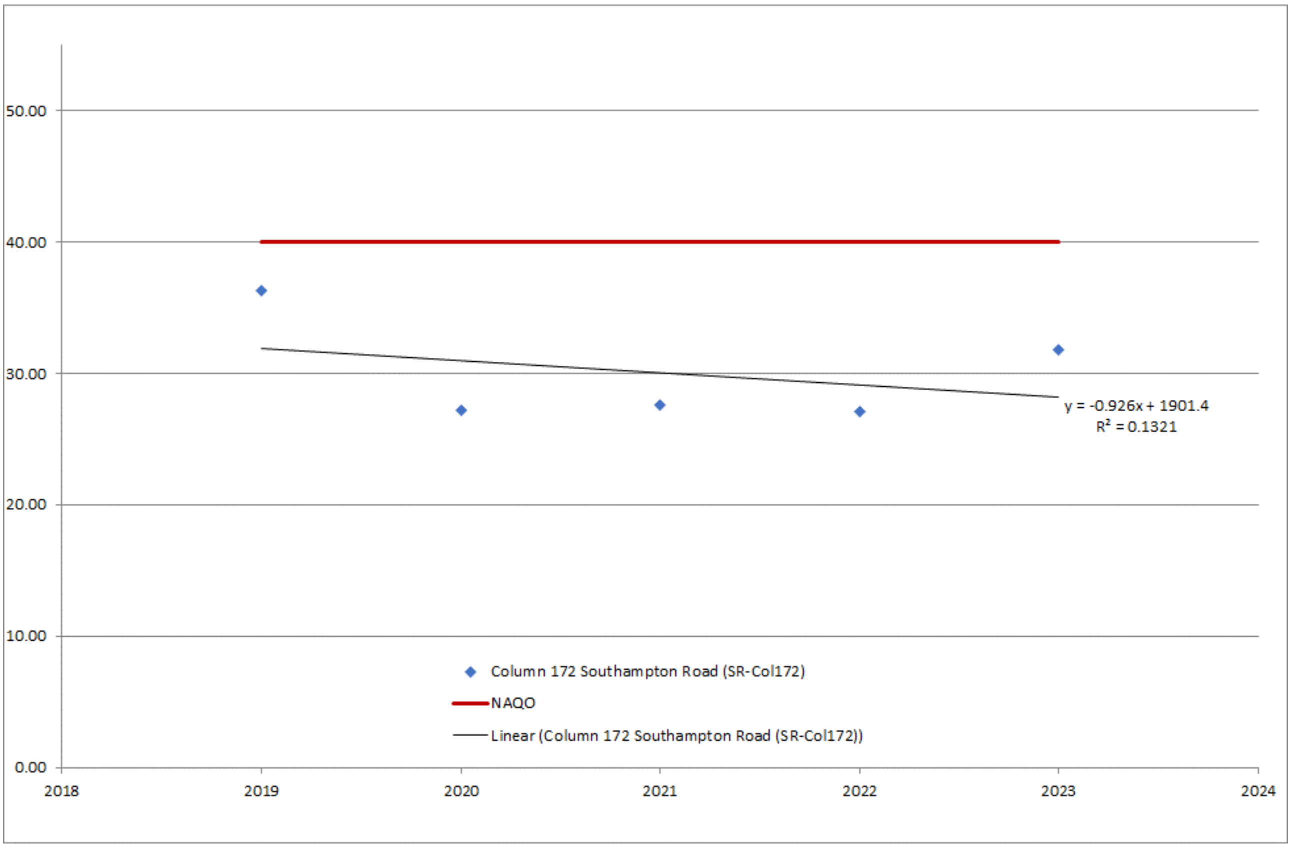


Figure F.128: Southampton Road Column 177 (SR-Col177)

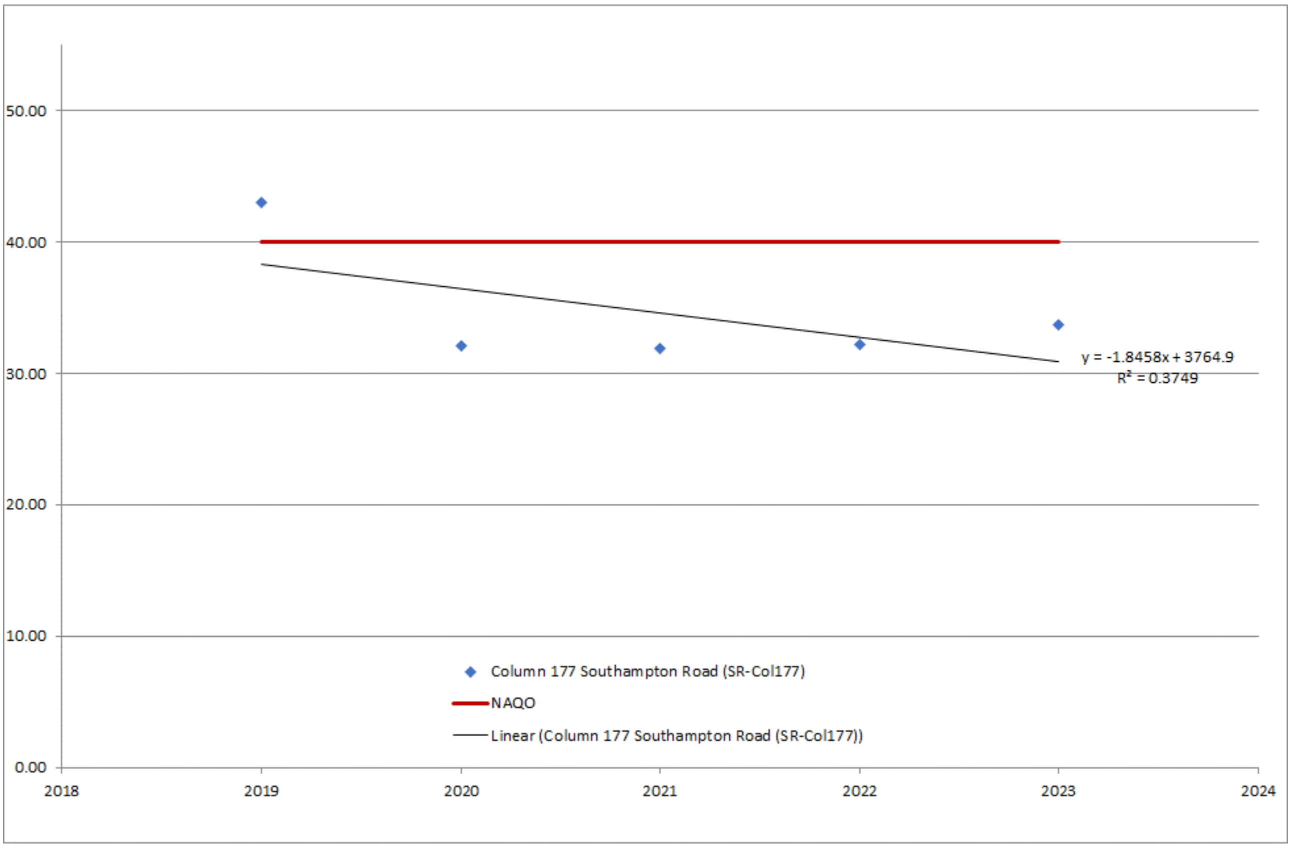


Figure F.129: Southampton Road Column 178 (SR-Col178)

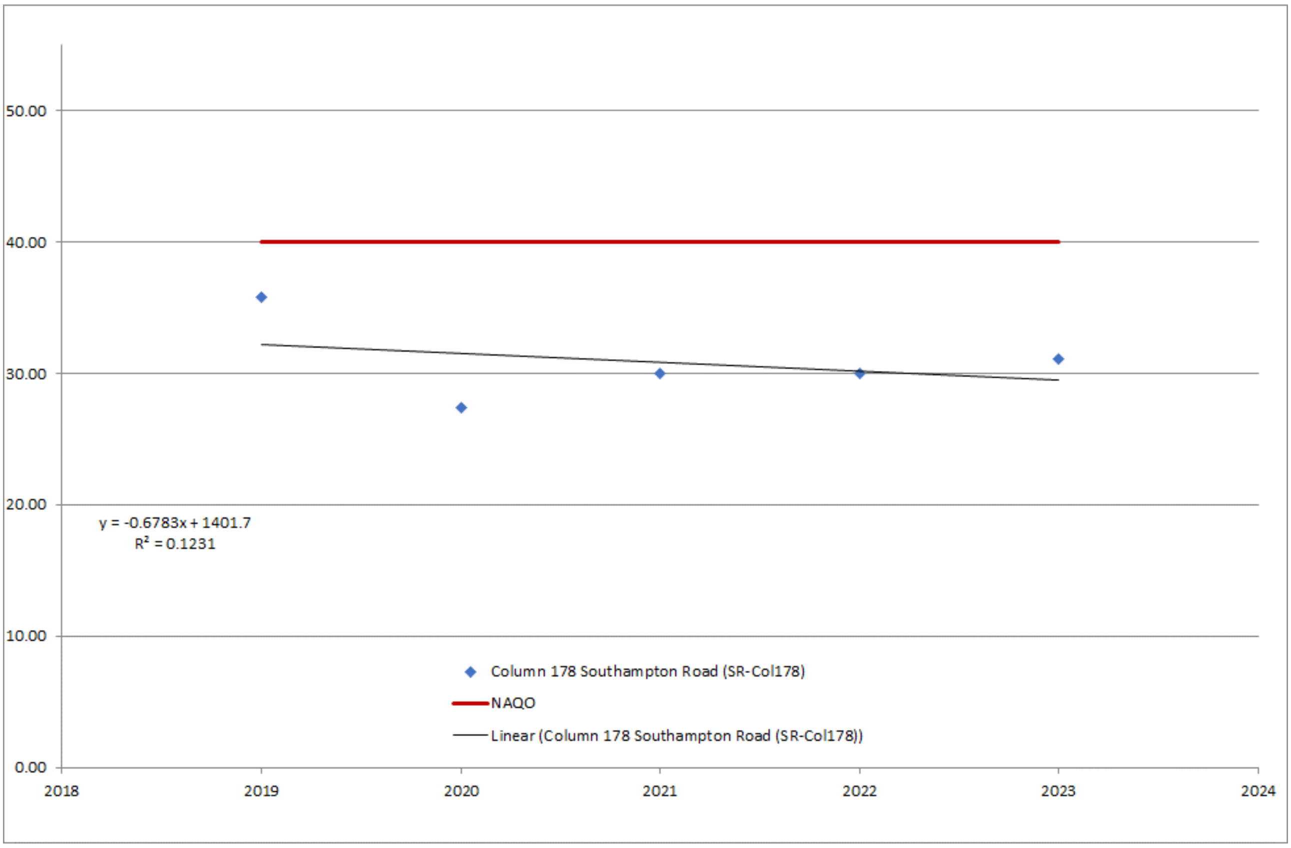


Figure F.130: Southampton RoadColumn 78 (SR-Col78)

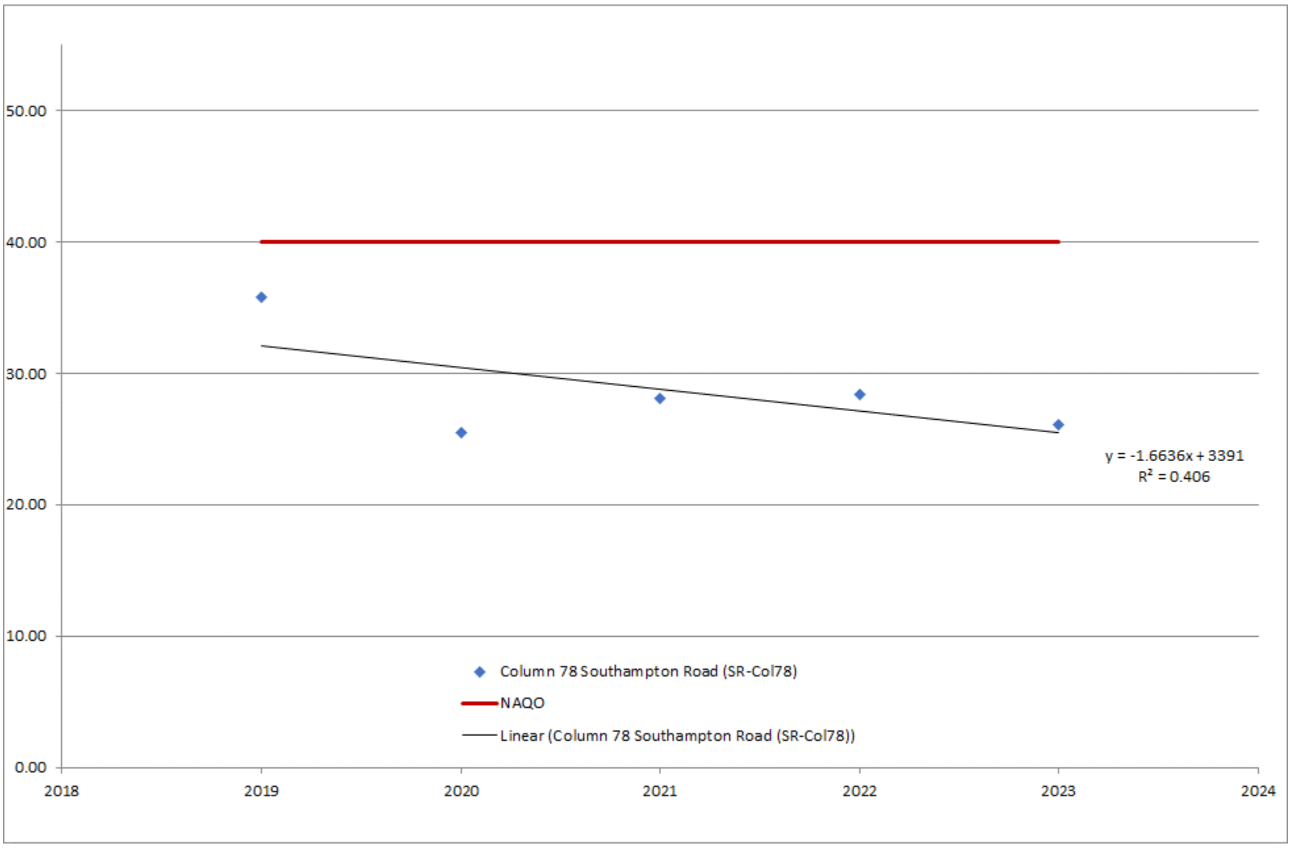


Figure F.131: Church Street Opposite Column 2 (CS-OCol2)

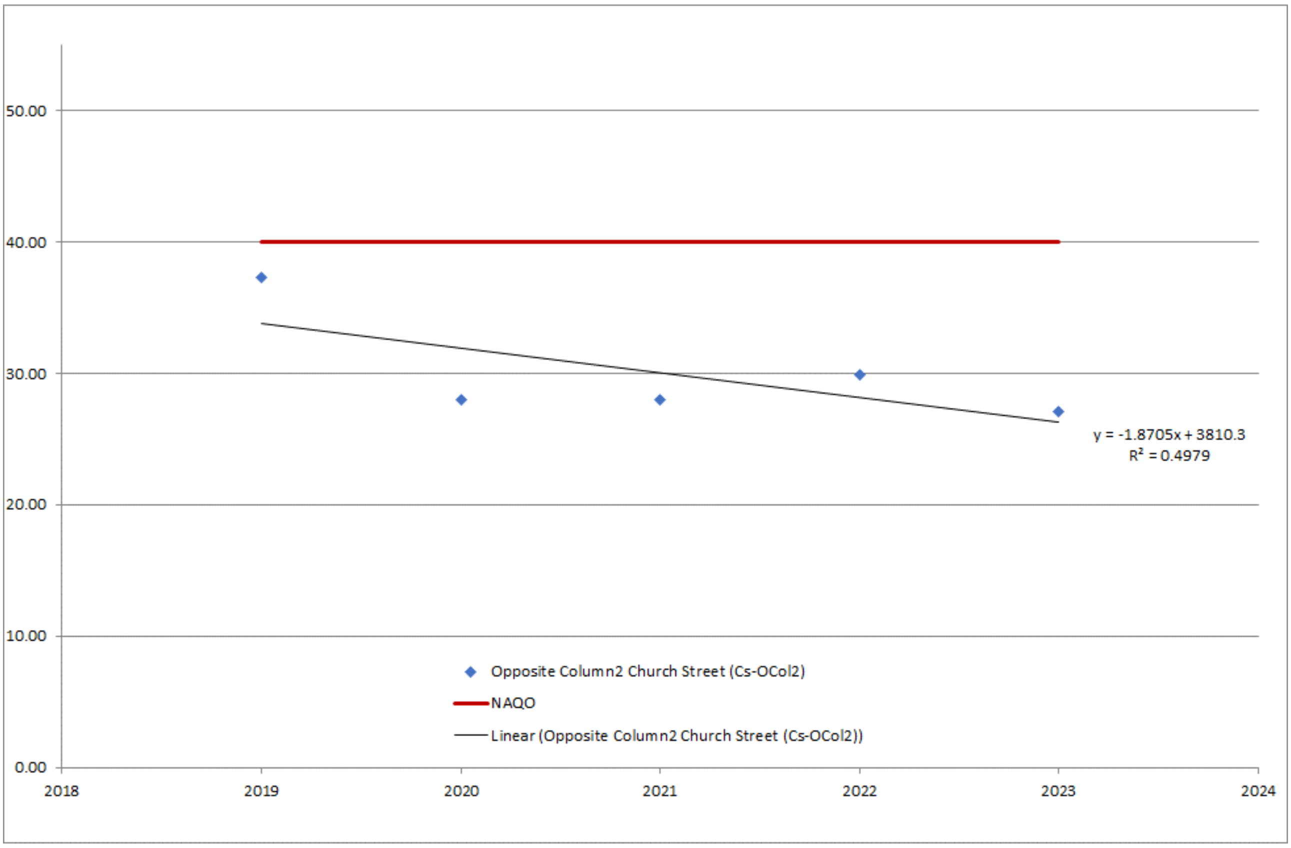


Figure F.132: Eastern Road Column 106 (ER-Col106)

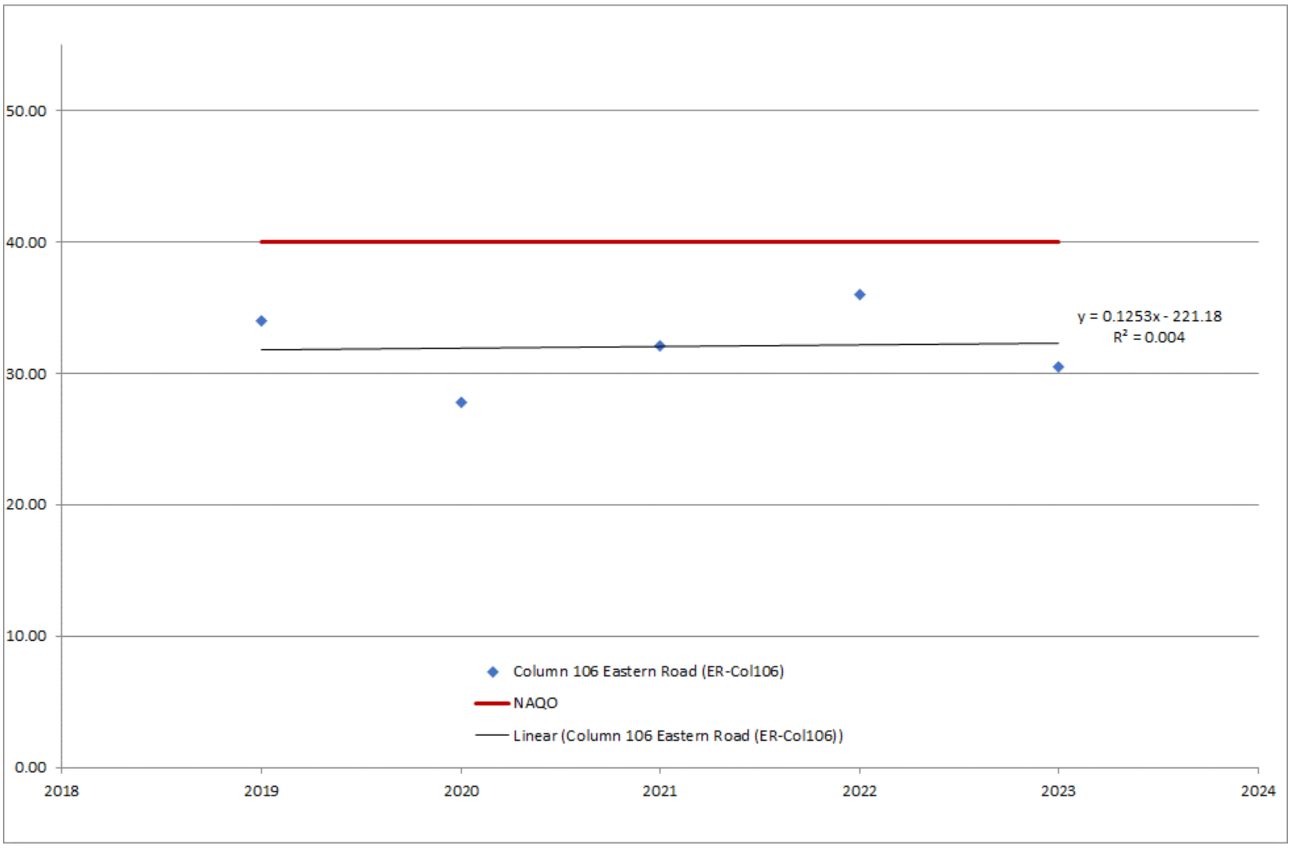


Figure F.133: Eastern Road Column 107 (ER-Col107)

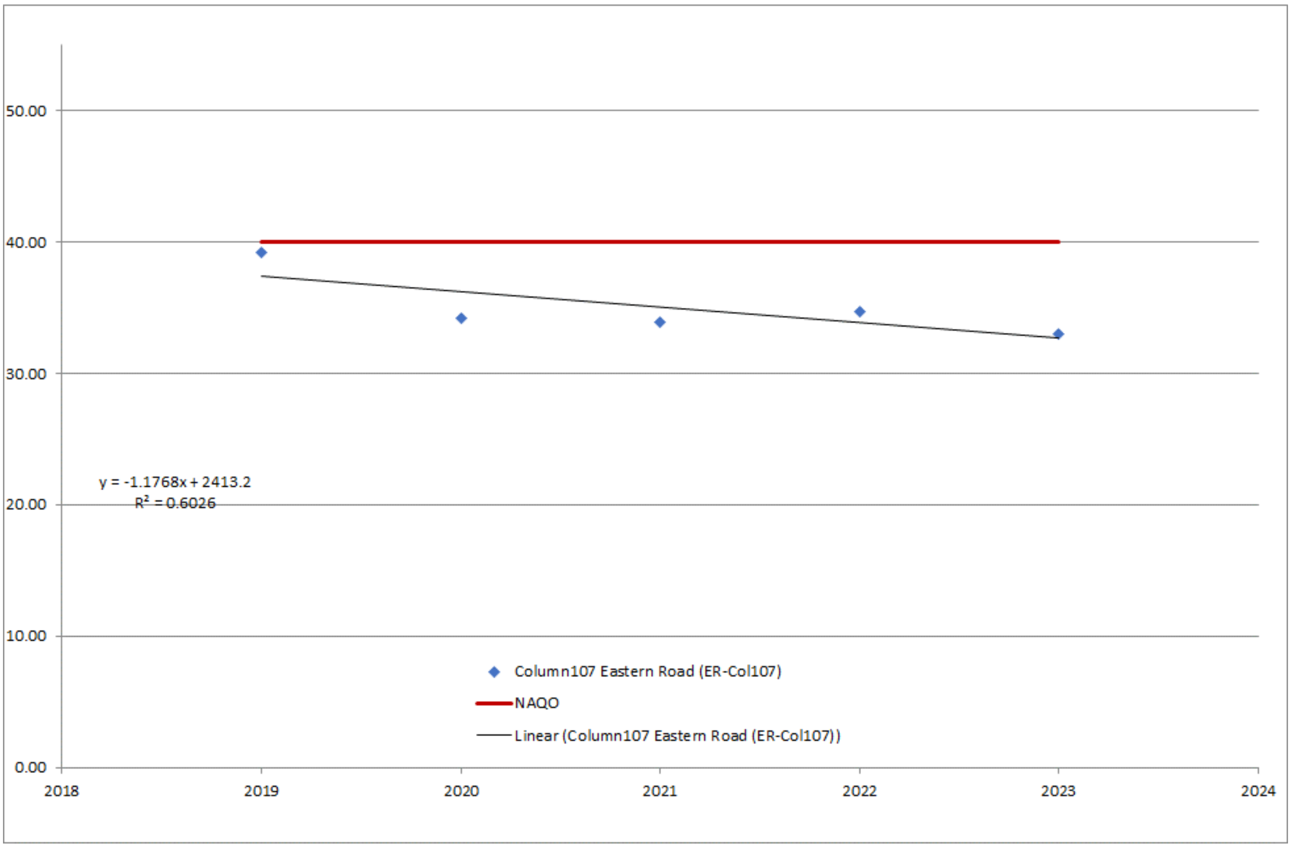


Figure F.134: Eastern RoadColumn 51 (ER-Col51)

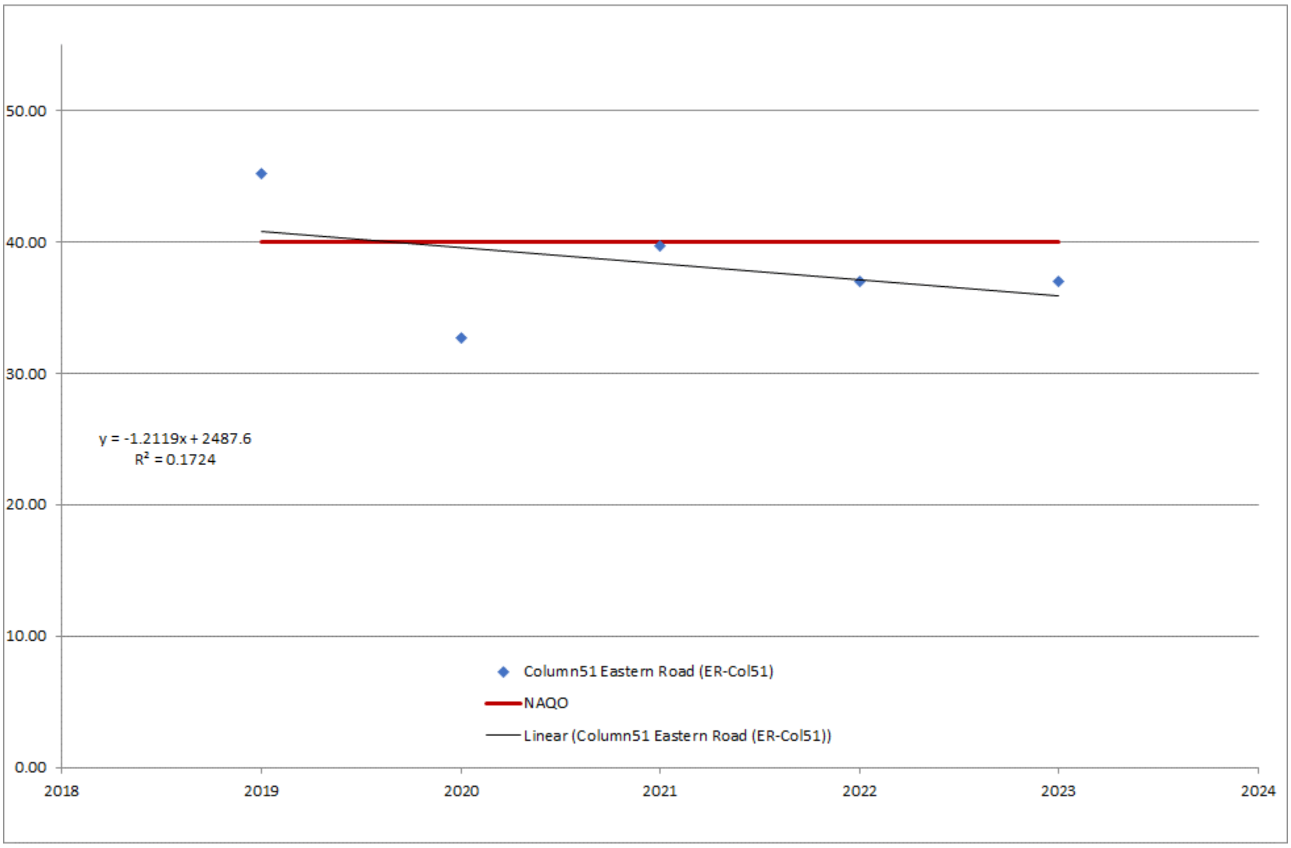


Figure F.135: Eastern Road Column 52 (ER-Col52)

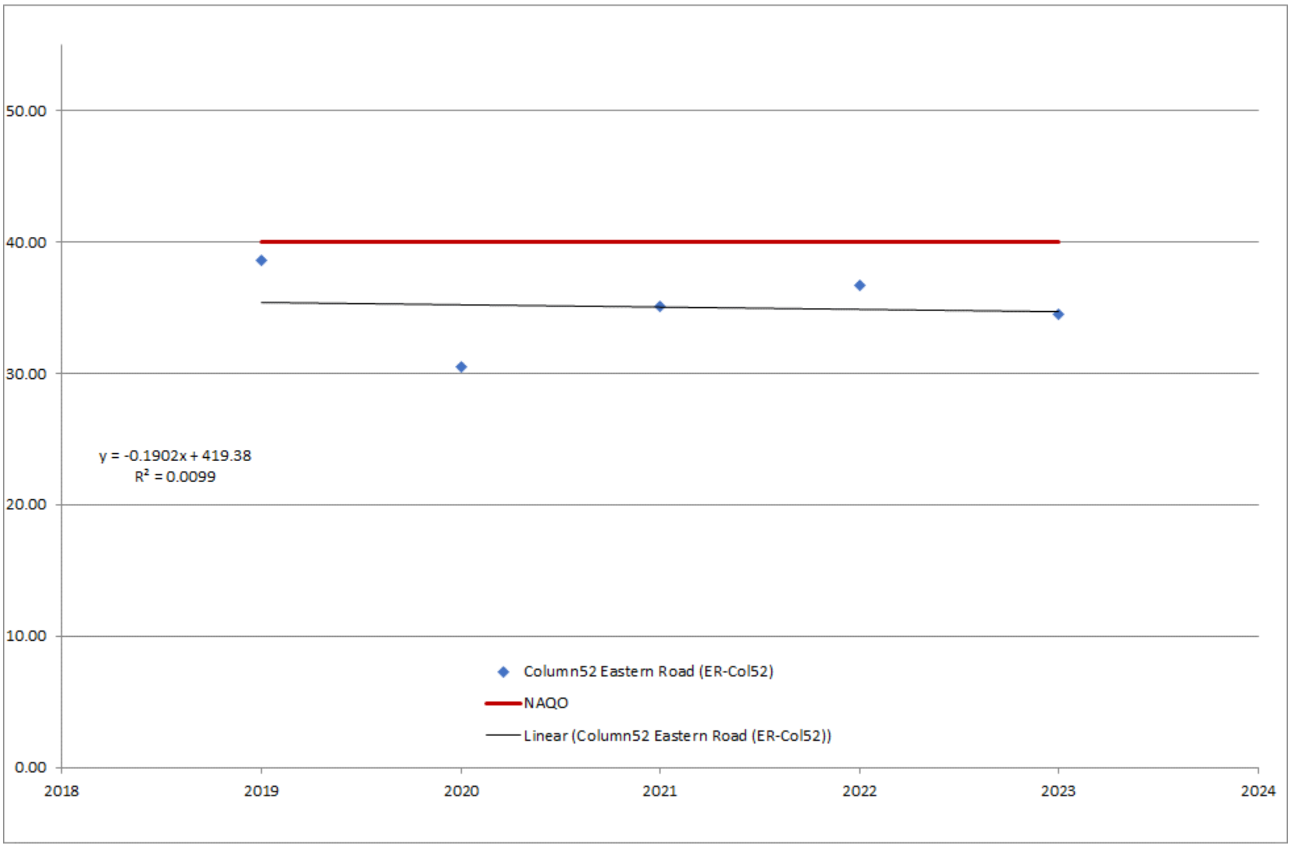


Figure F.136: 2 Allaway Avenue Column 2 (AA-Col2)

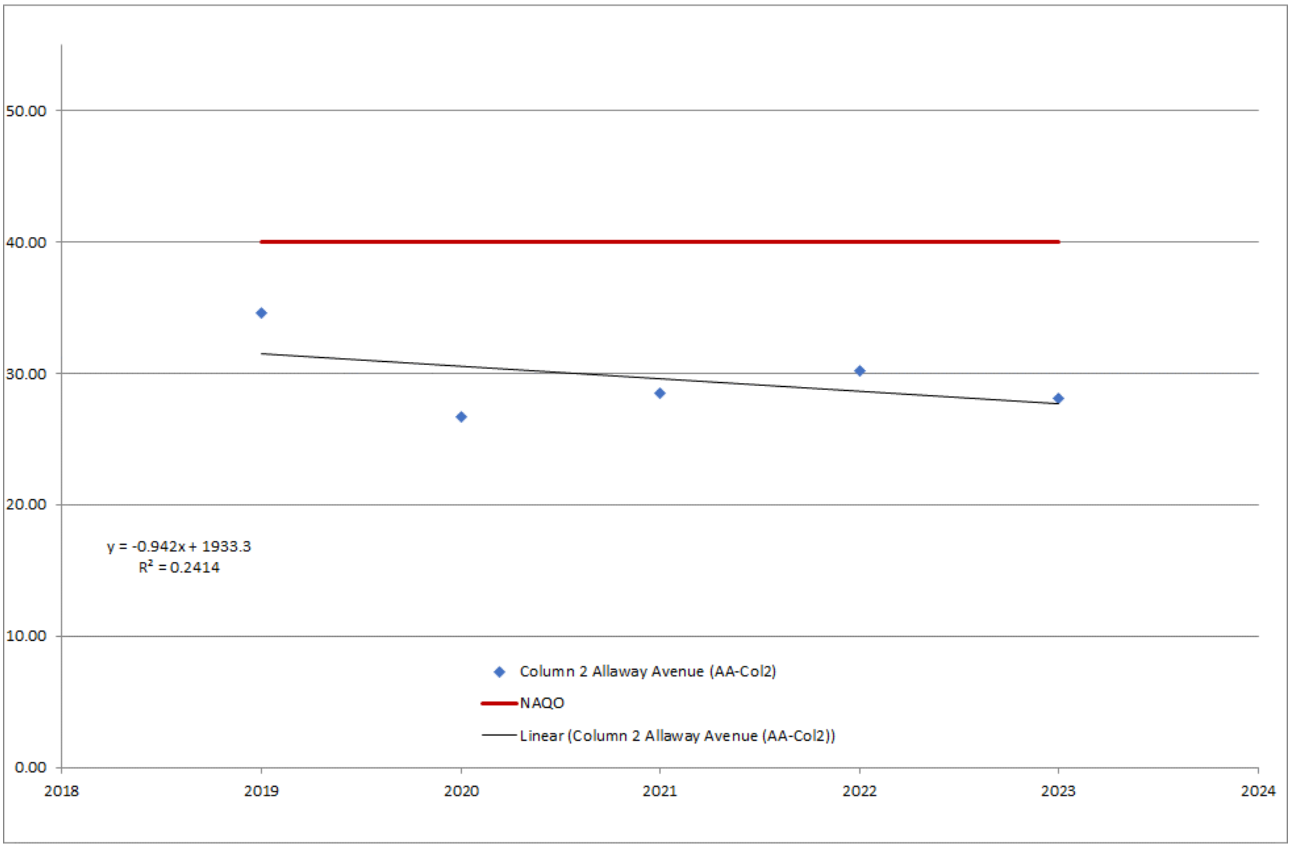


Figure F.137: 3 Allaway AvenueColumn 3 (AA-Col3)

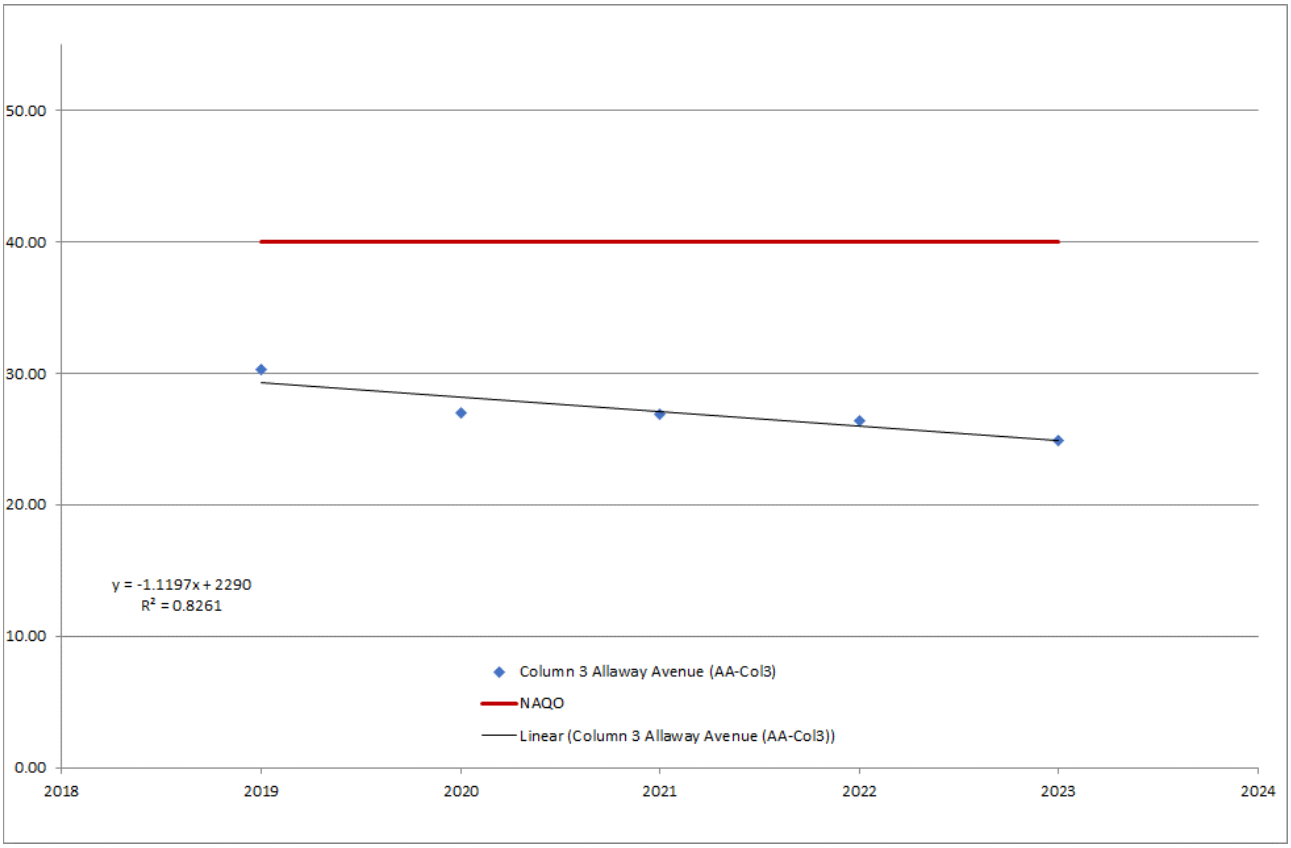


Figure F.138: Anchorage Road Column 2 (AR-Col2)

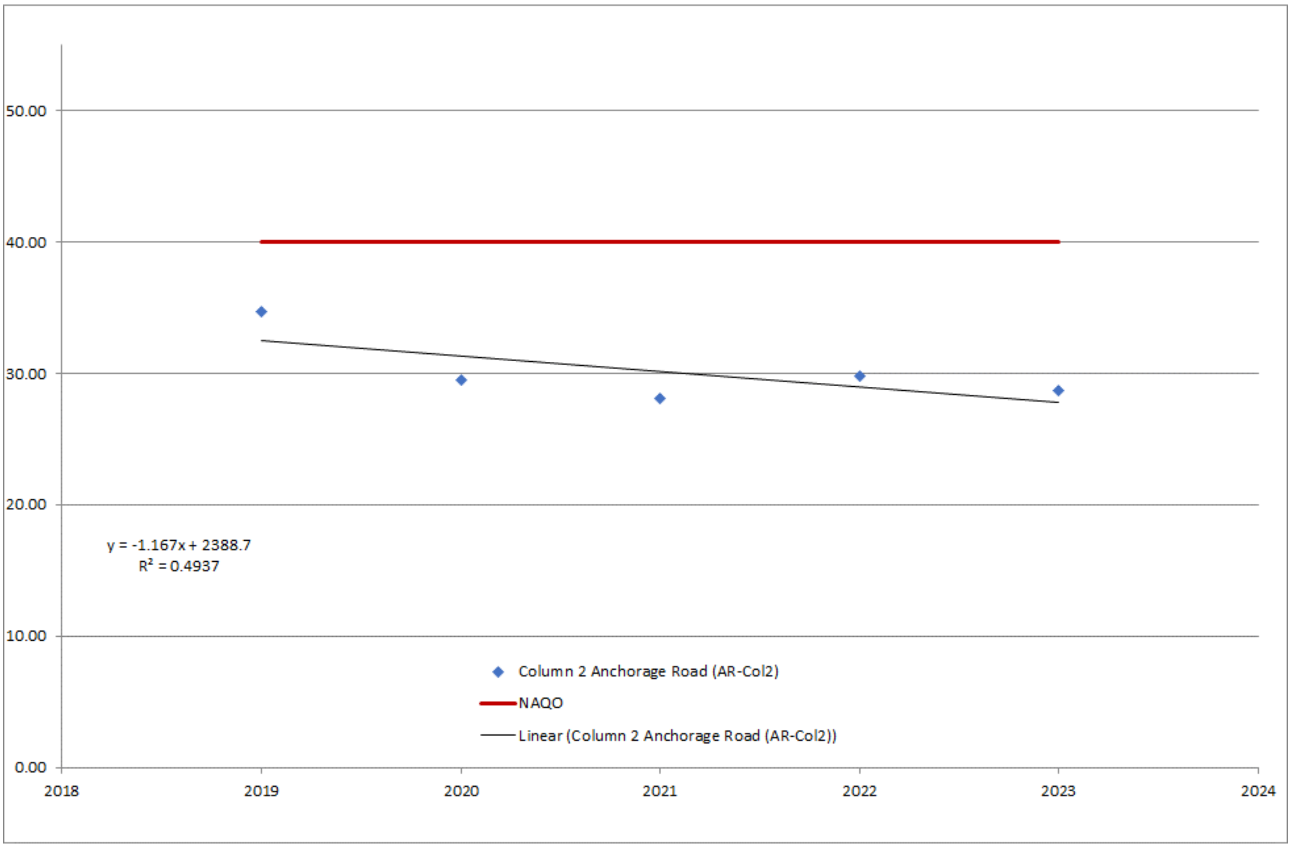


Figure F.139: Church Street Column 11 (CS-Col11)

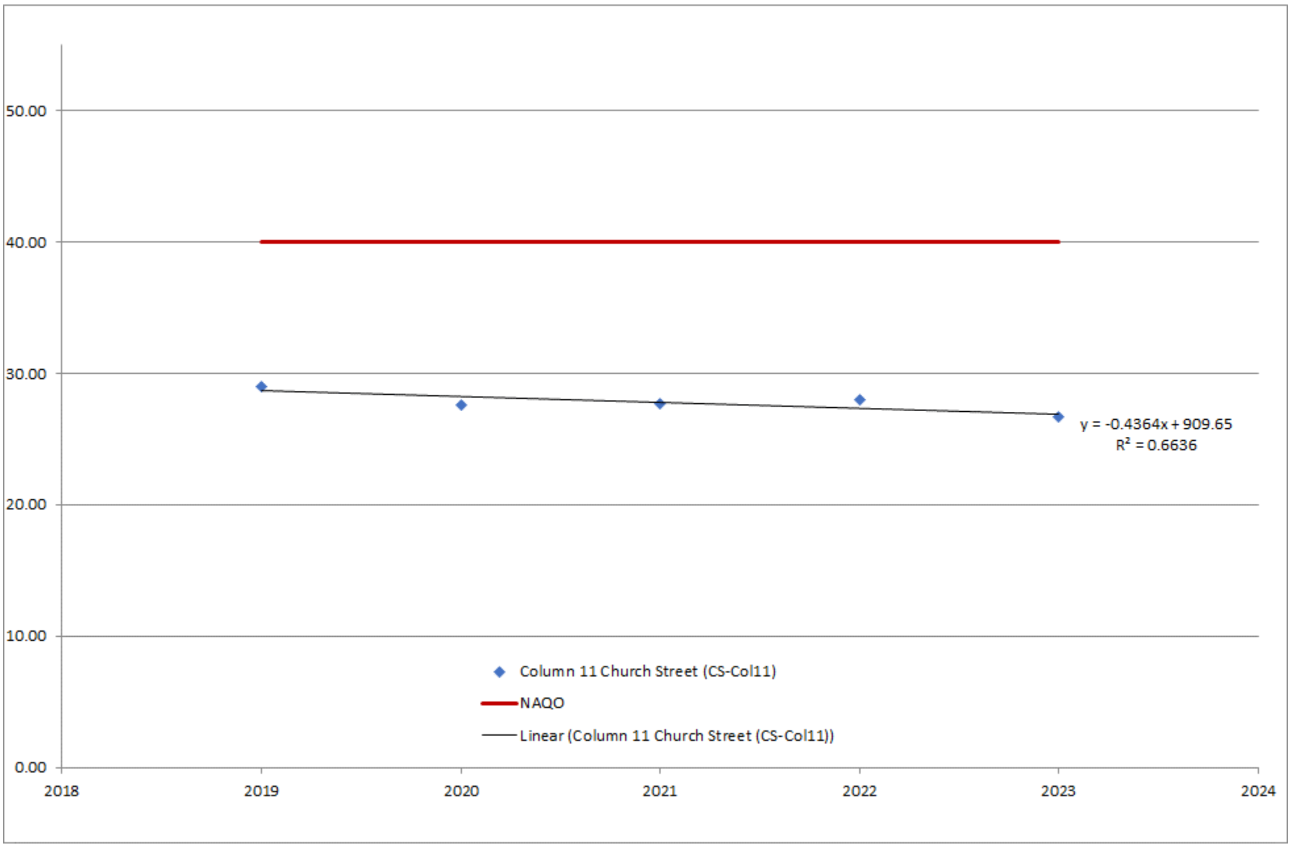


Figure F.140: Copnor Road Column 15 (CR-Col15)

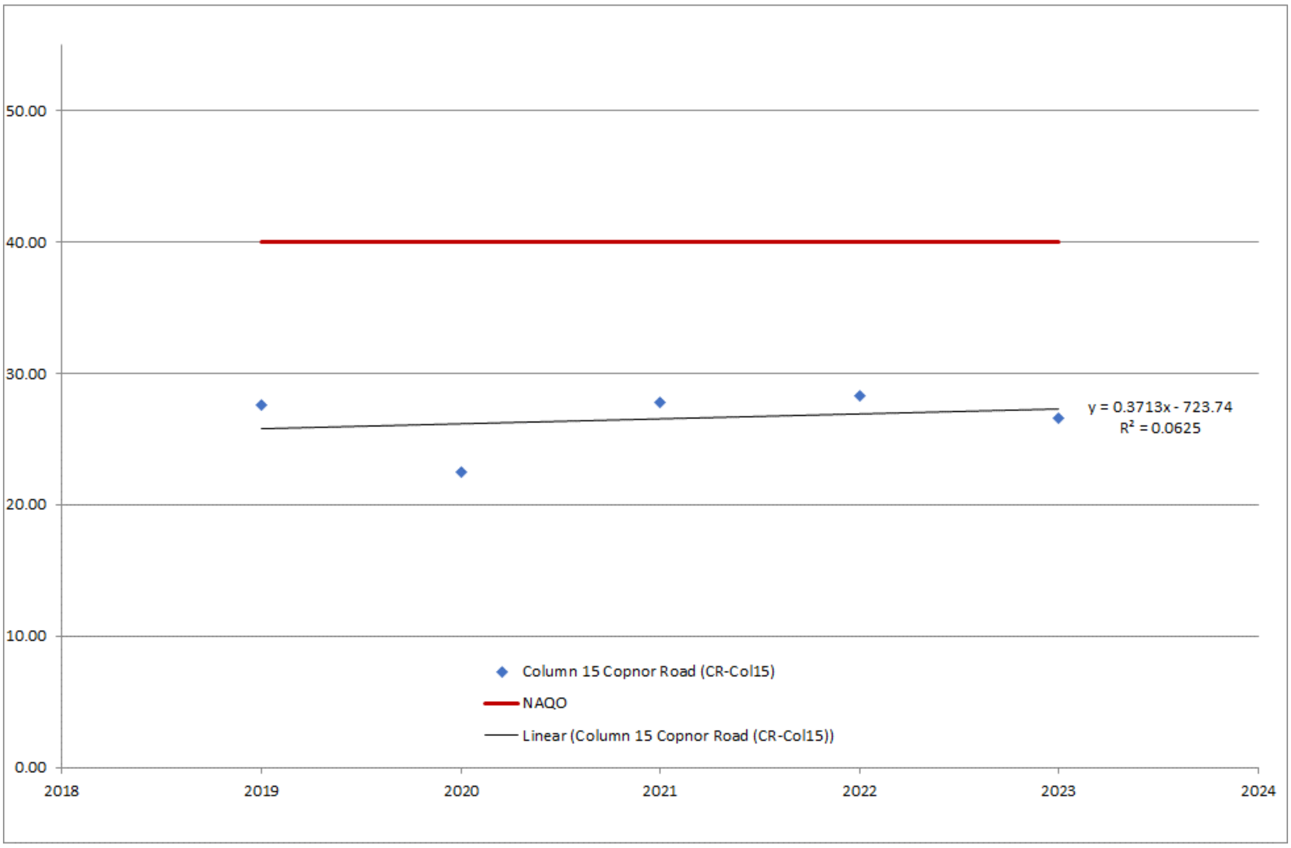


Figure F.141: Copnor Road Column 16 (CR-Col16)

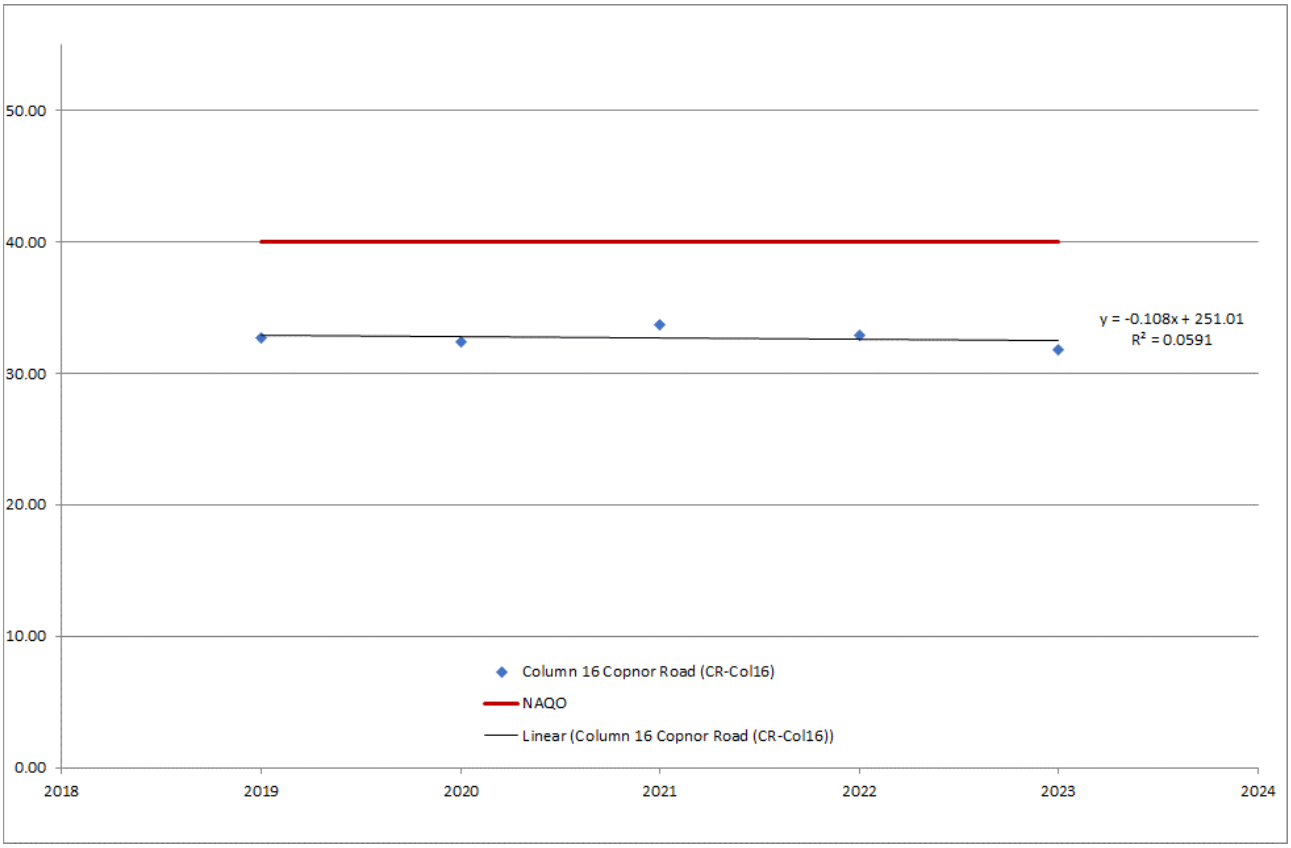


Figure F.142: Commercial Road Column 3 (ComR-Col3)

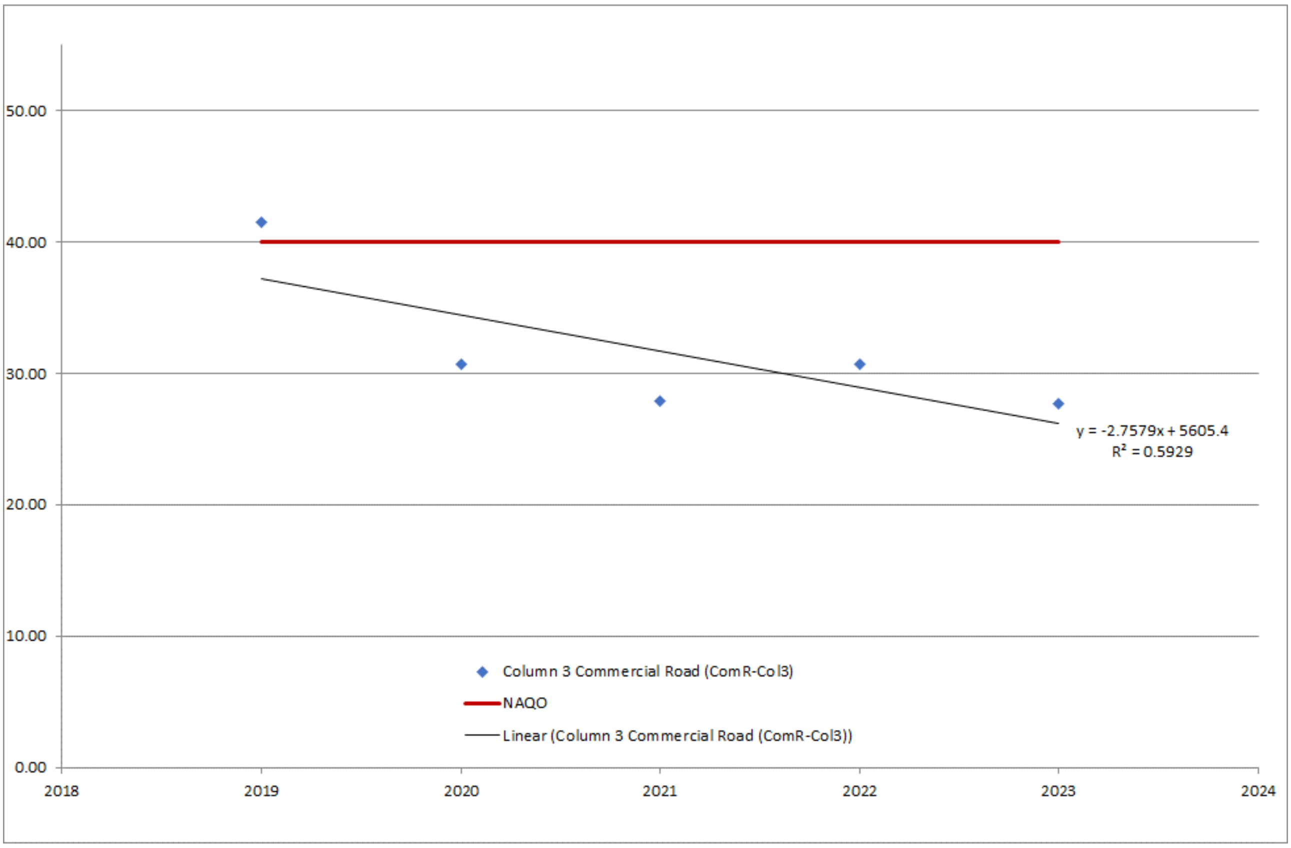


Figure F.143: Commercial Road Column 4 (ComR-Col4)

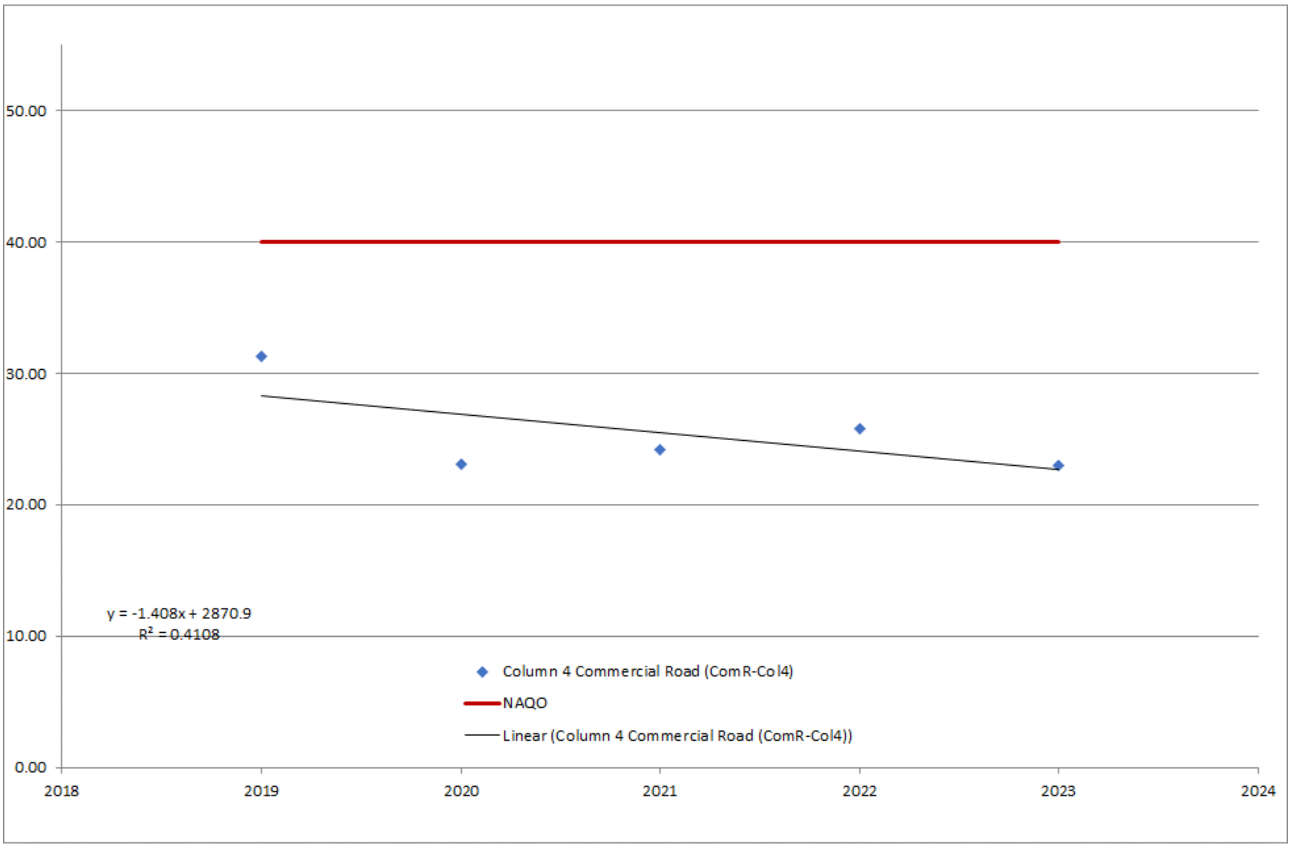


Figure F.144: Hope Street Column 11 (HS-Col11)

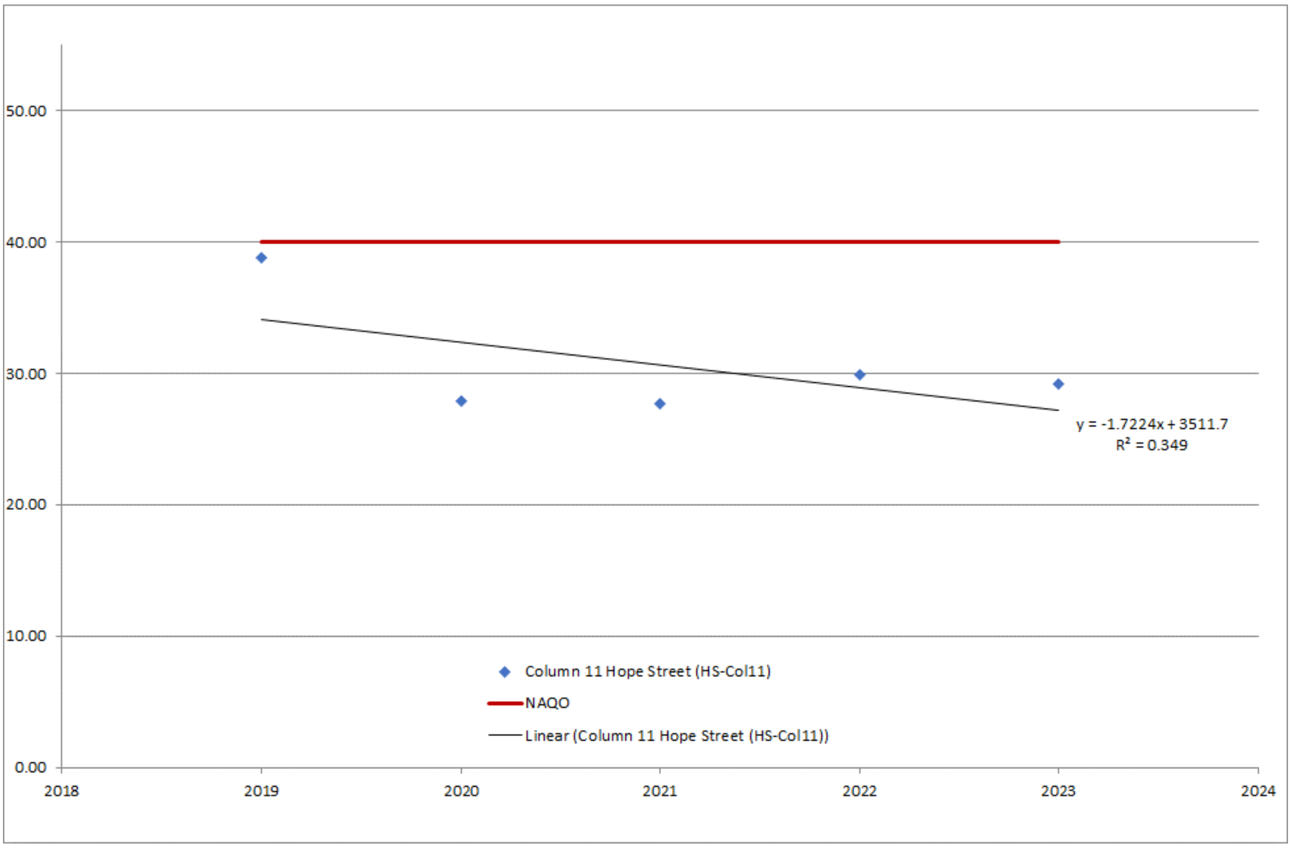


Figure F.145: Fratton Road Column 5 (FR-Col5)

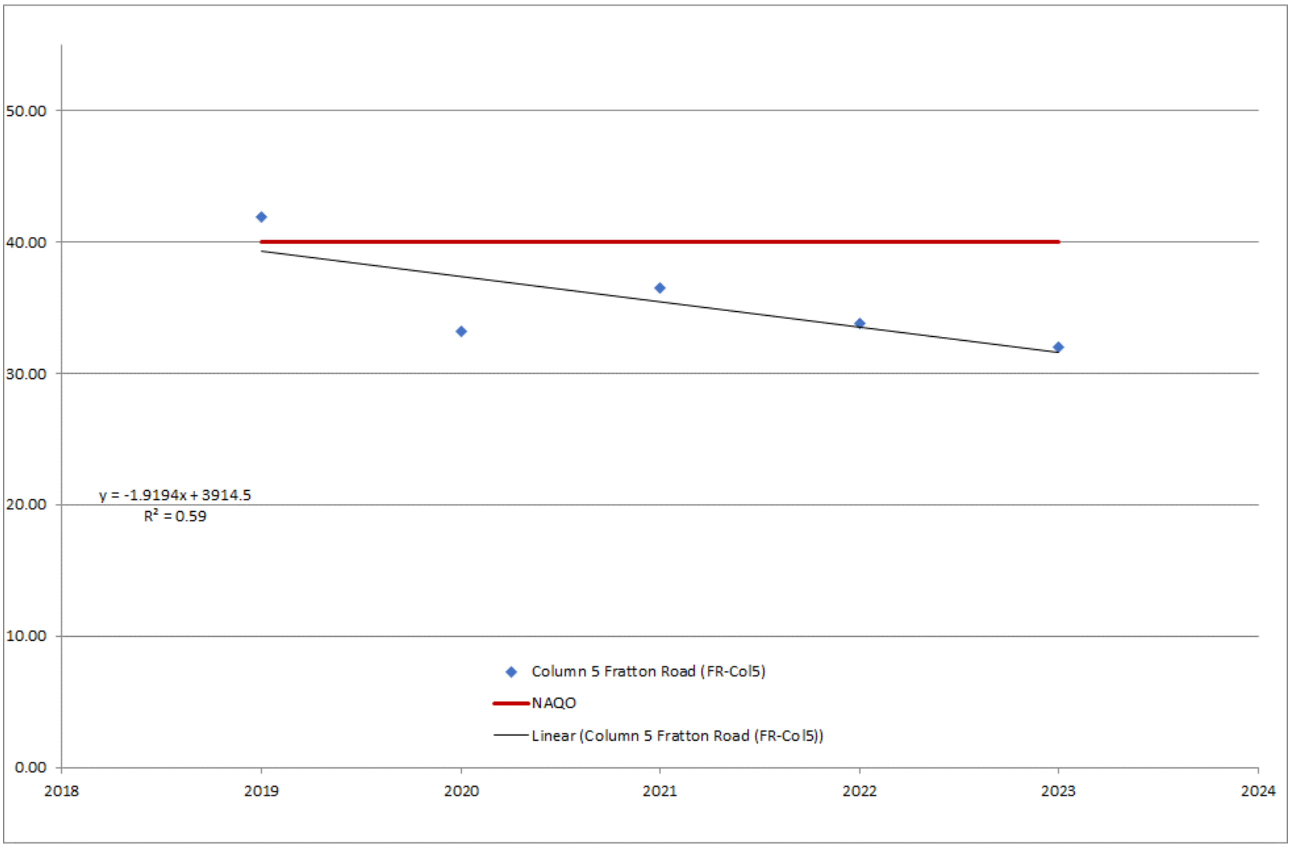


Figure F.146: Church Street Column 12 (CS-Col12)

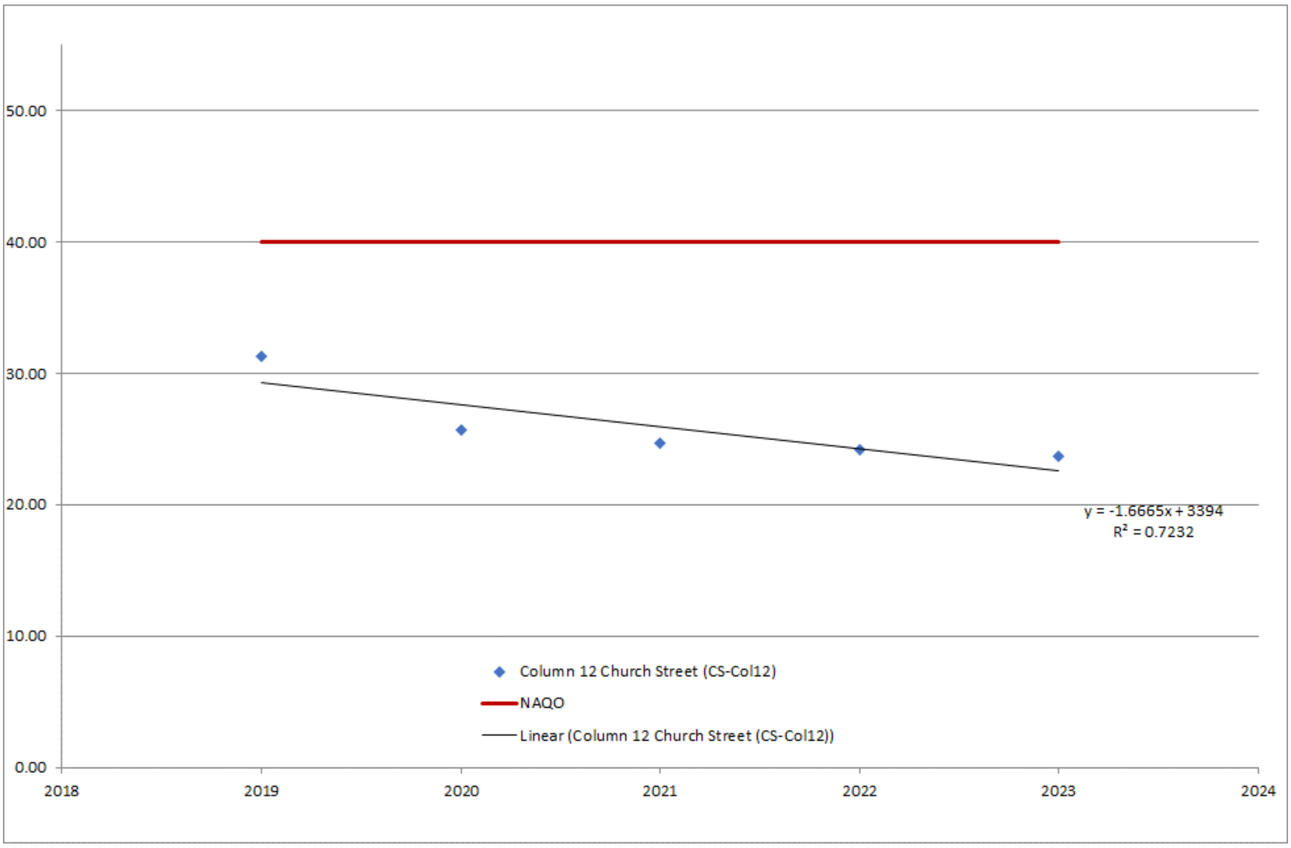


Figure F.147: Church Street Column 2 (CS-Col2)

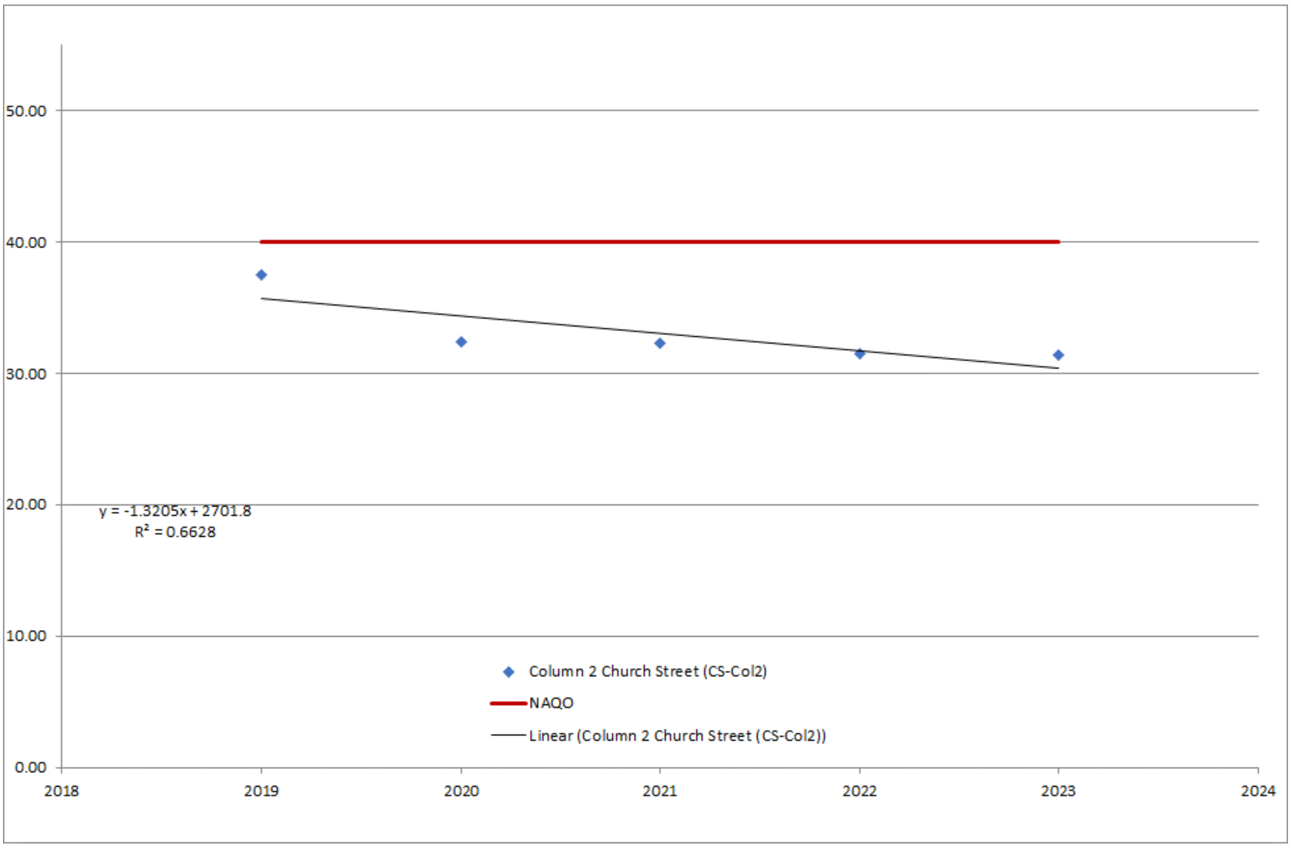


Figure F.148: Anchorage Column 3 (AR-Col3)

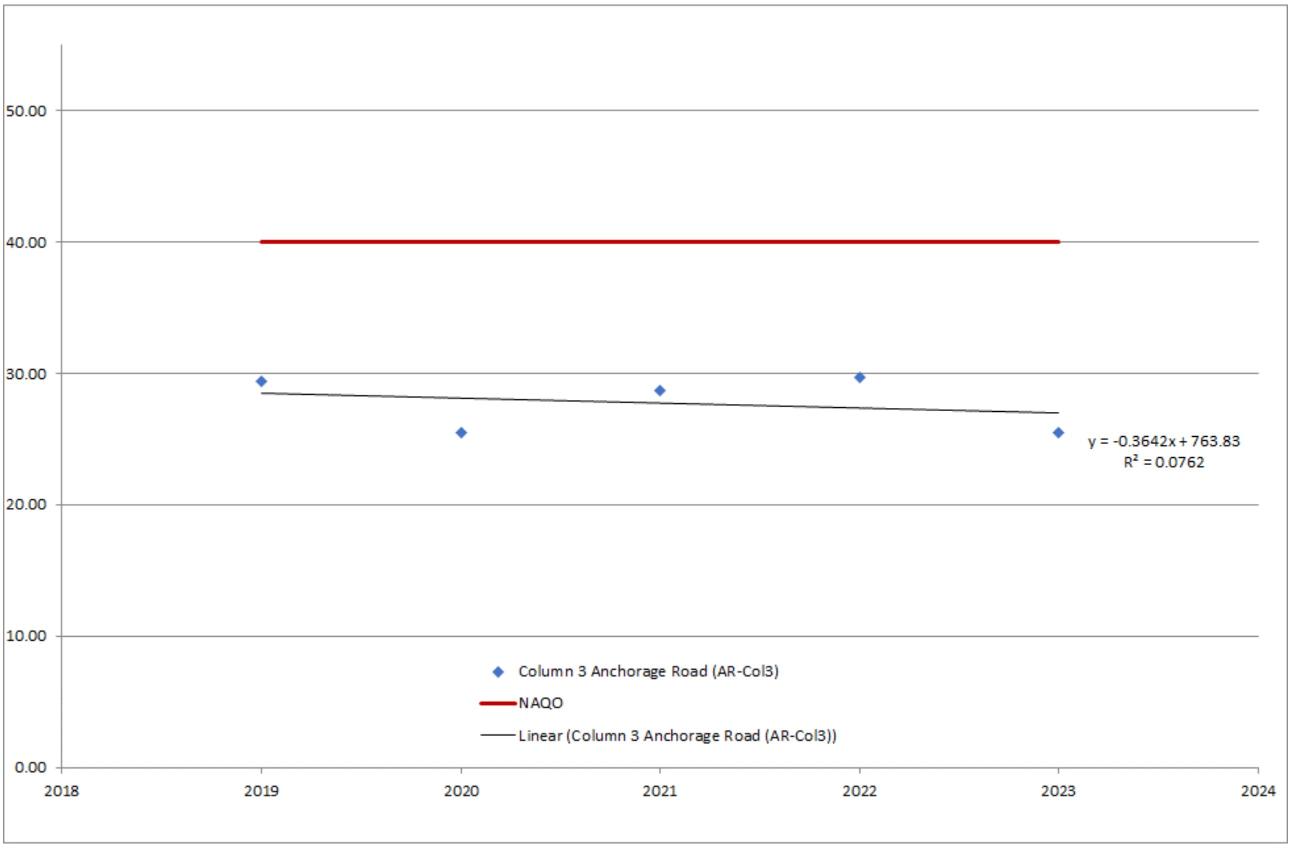


Figure F.149: Copnor Road Opposite Column 3 WB (CR-Col3 OPWB)

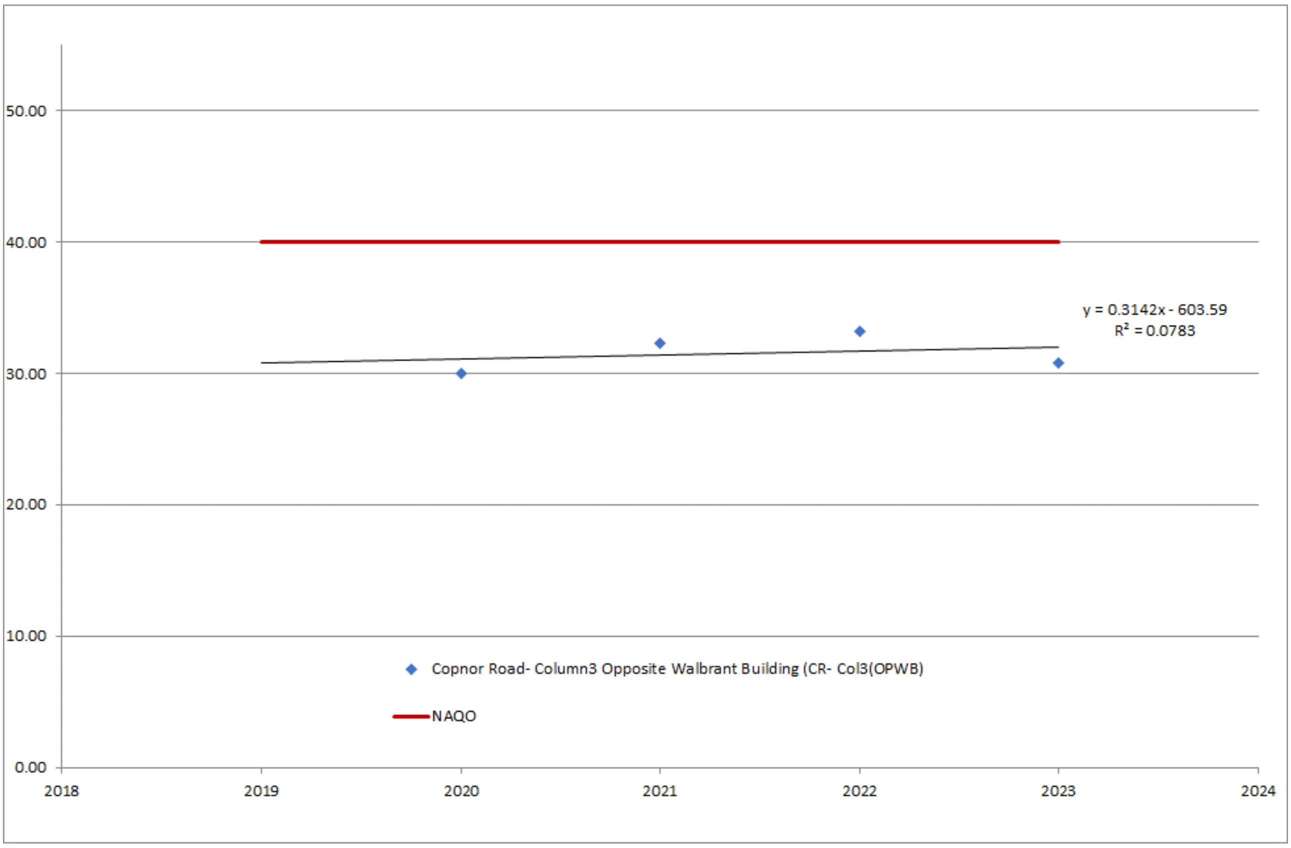


Figure F.150: Southampton Road/ Alloway Avenue (AAOB)

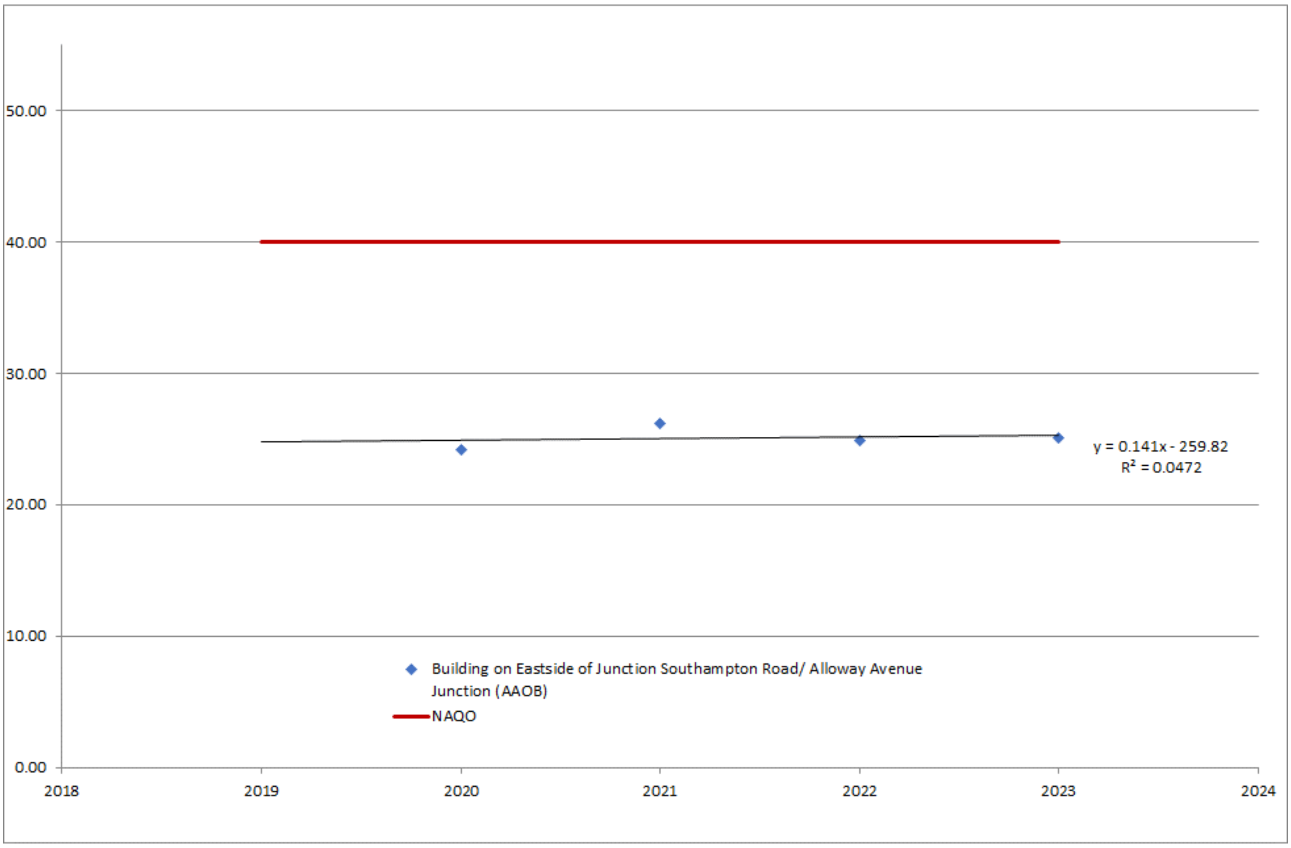


Figure F.151: Trafalgar Gate Column 3 (TG-Col3)

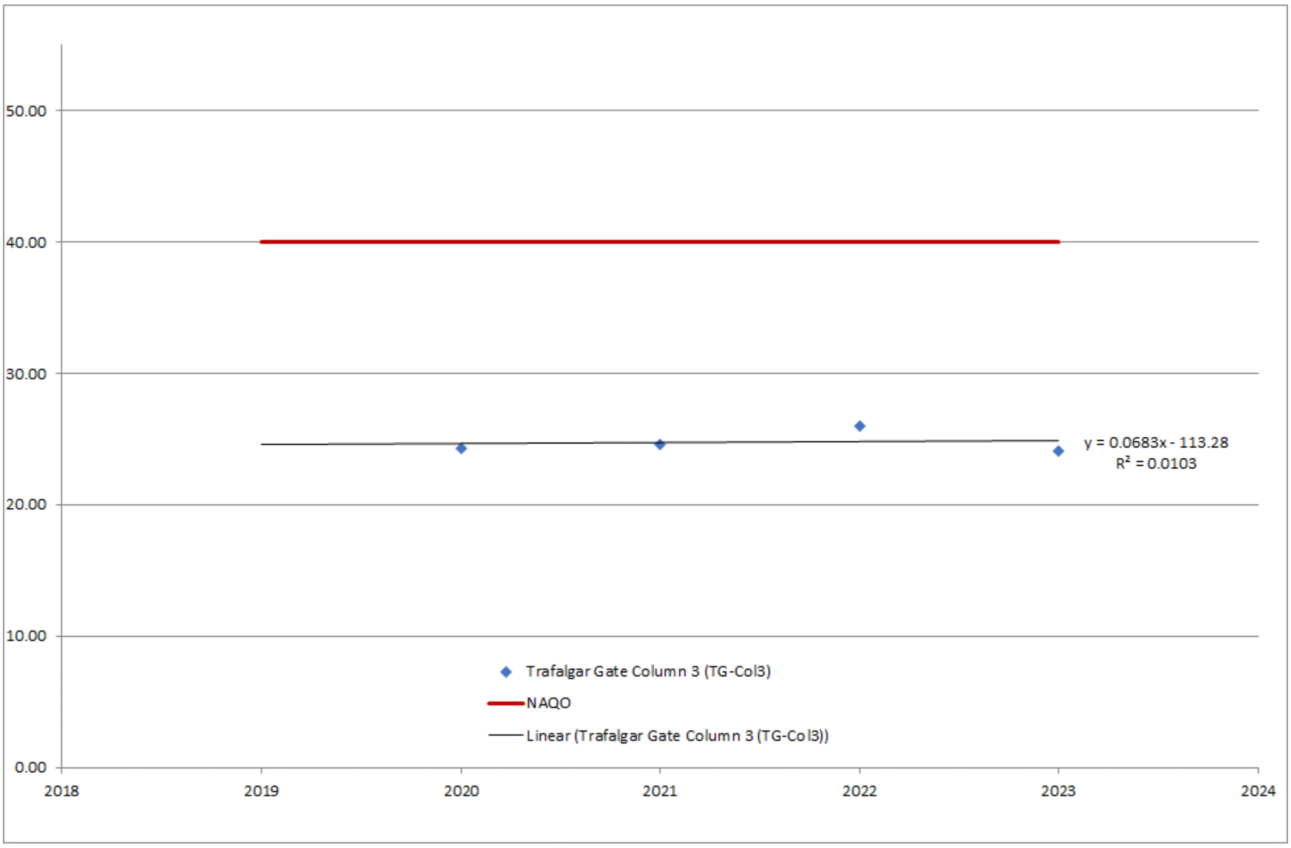


Figure F.152: Trafalgar Gate Column 4 (TG-Col4)

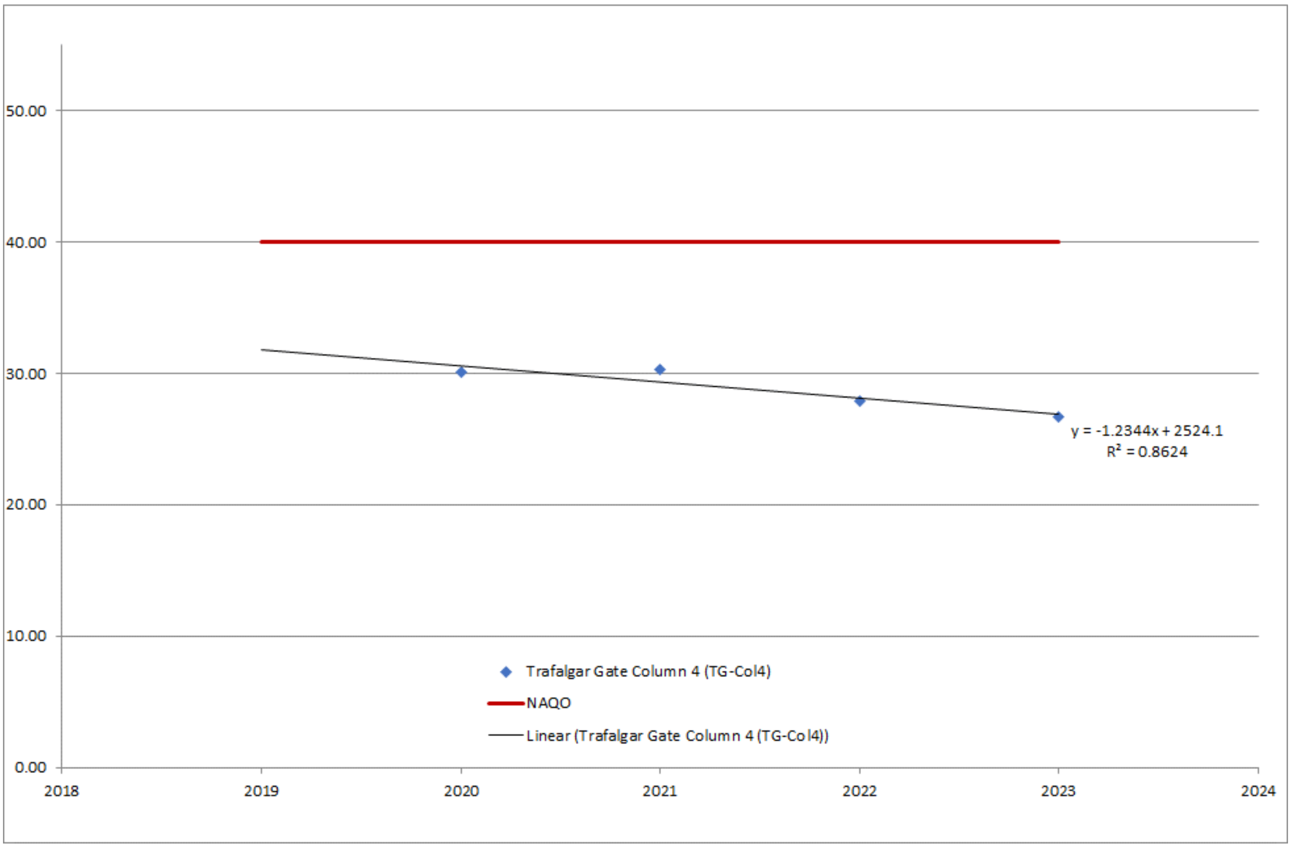


Figure F.153: Flathouse Road Column 2 (FR-Col2)

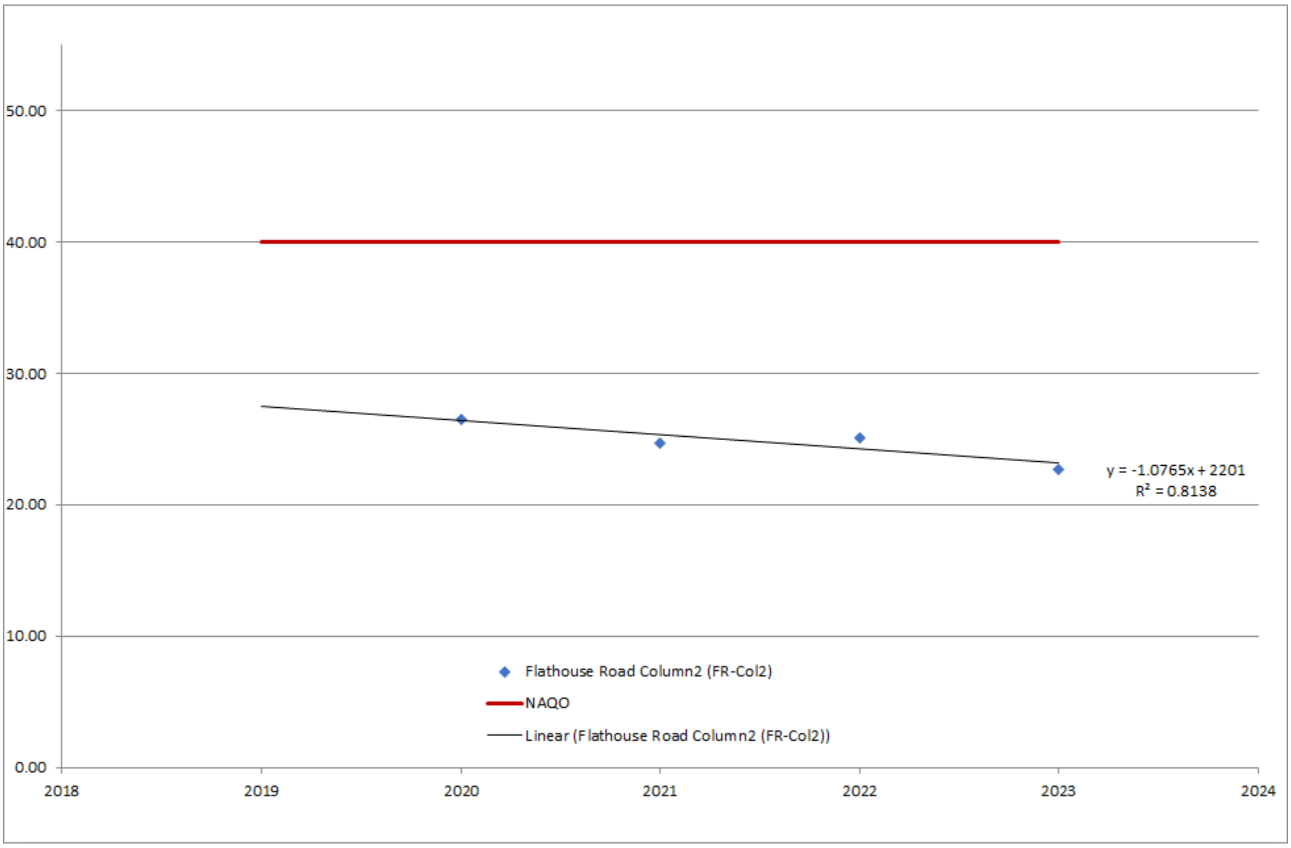


Figure F.154: Flathouse Road Opposite Column 2 (FR-OCol2)

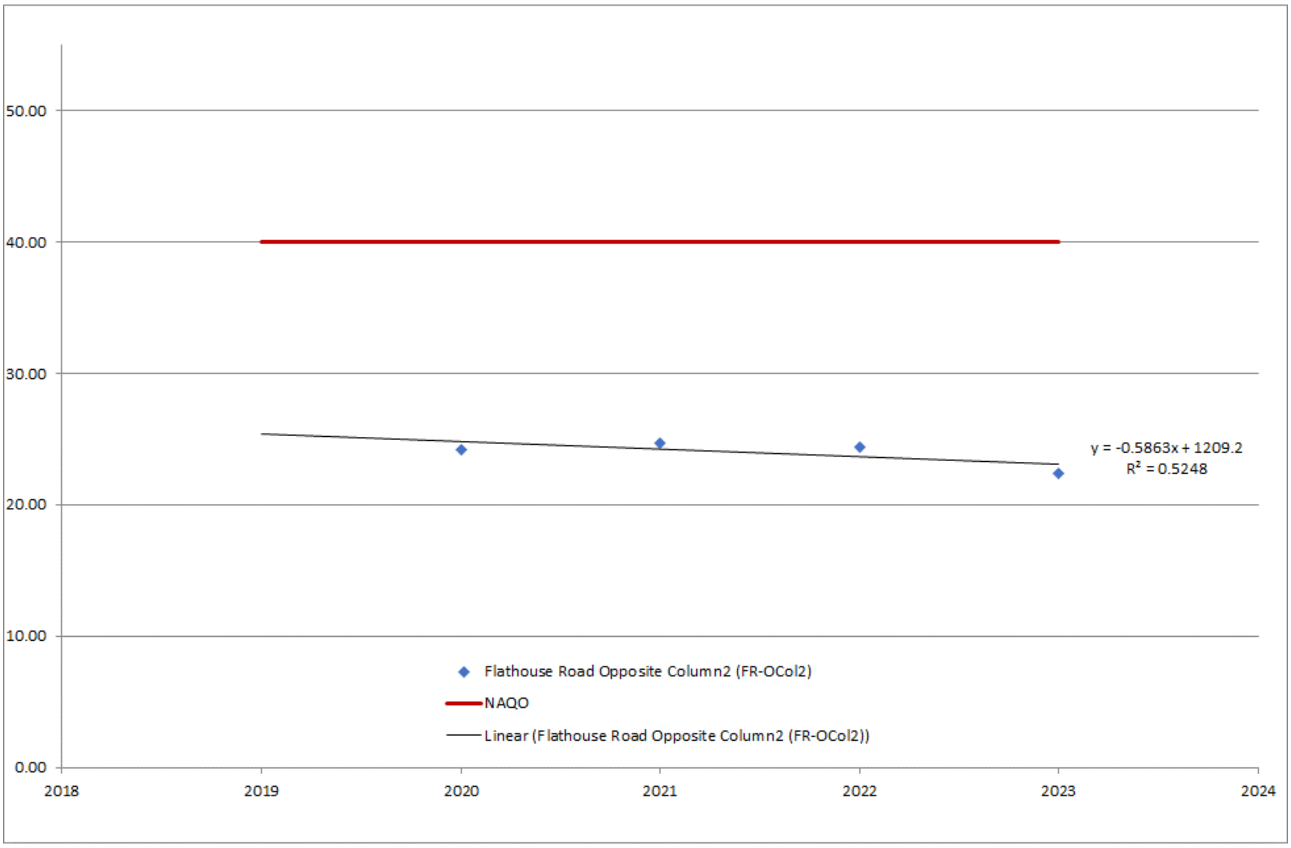


Figure F.155: Market Way (MW-StABS).

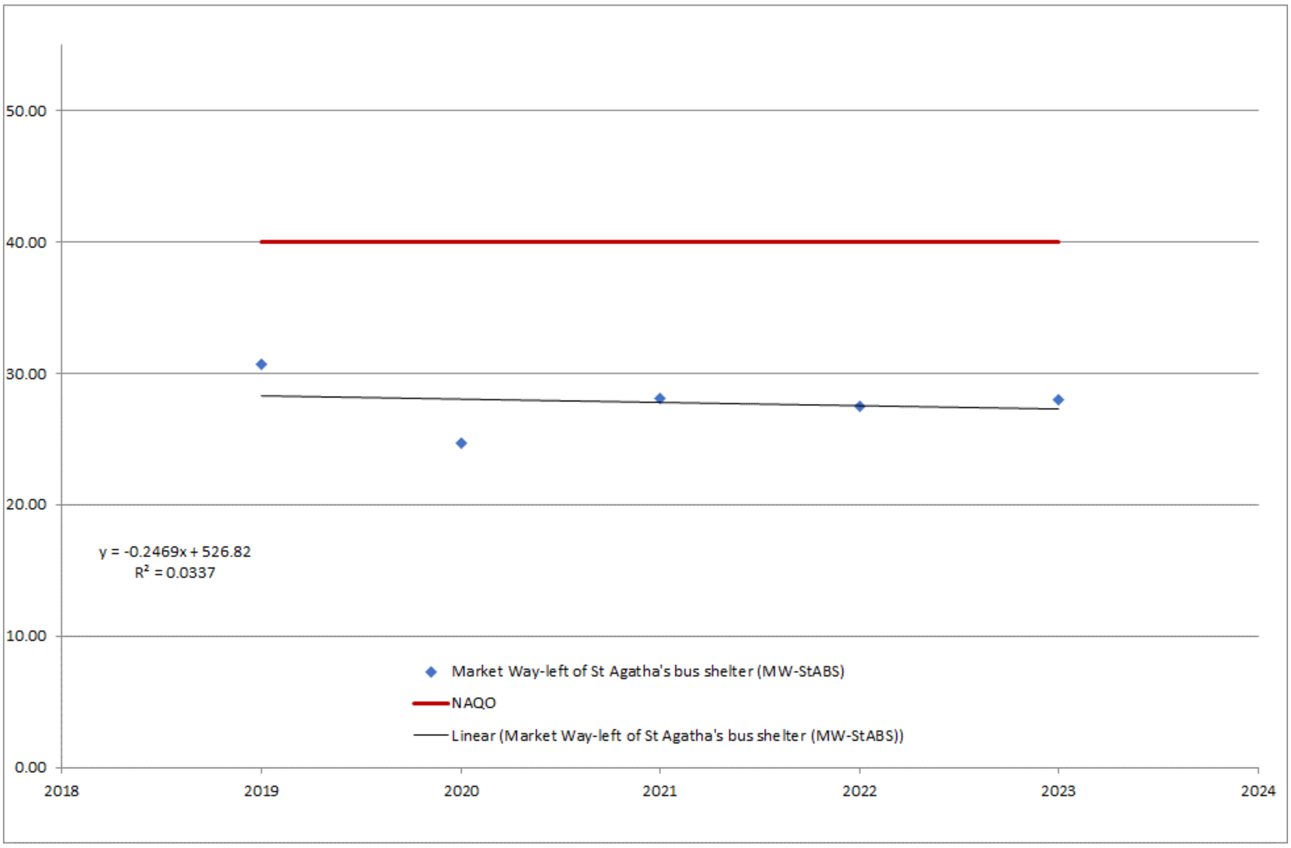
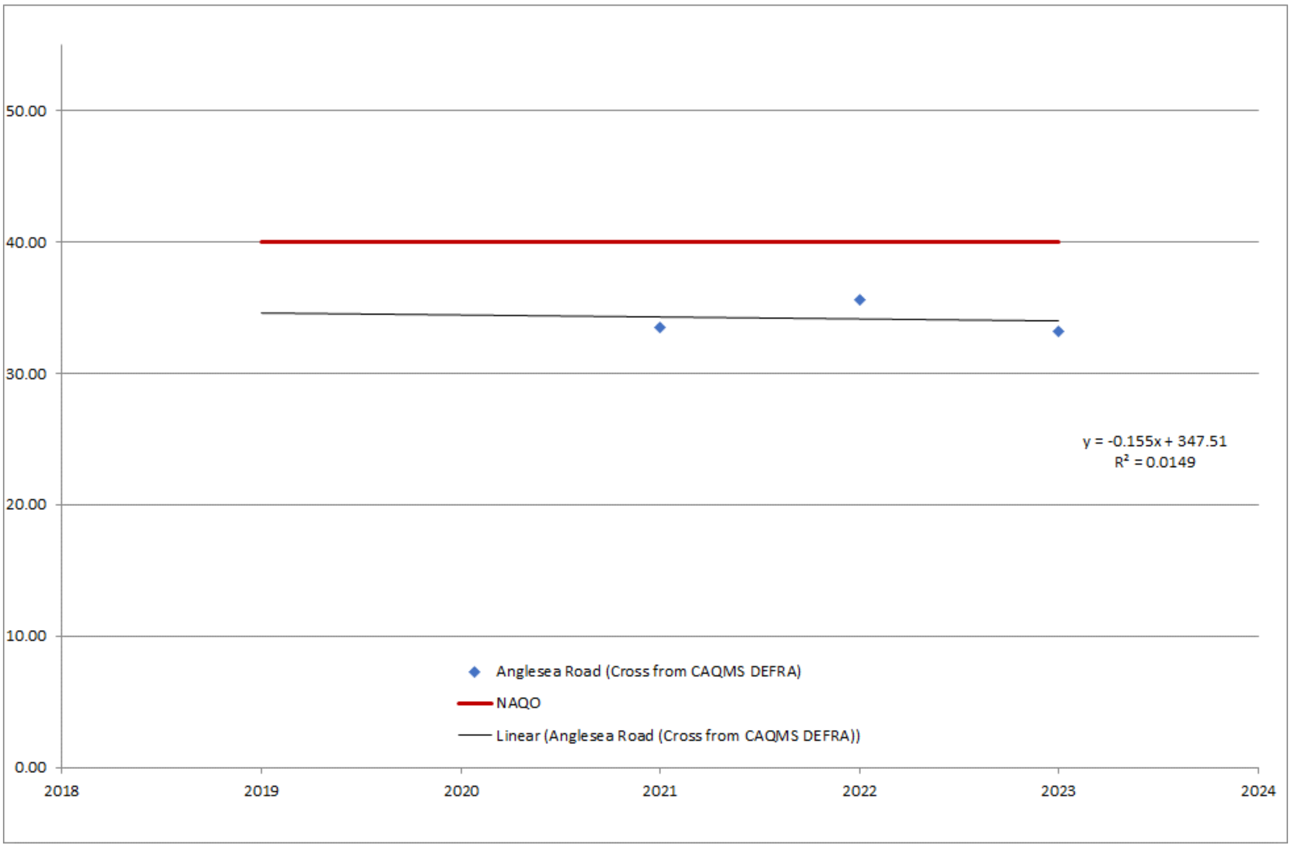


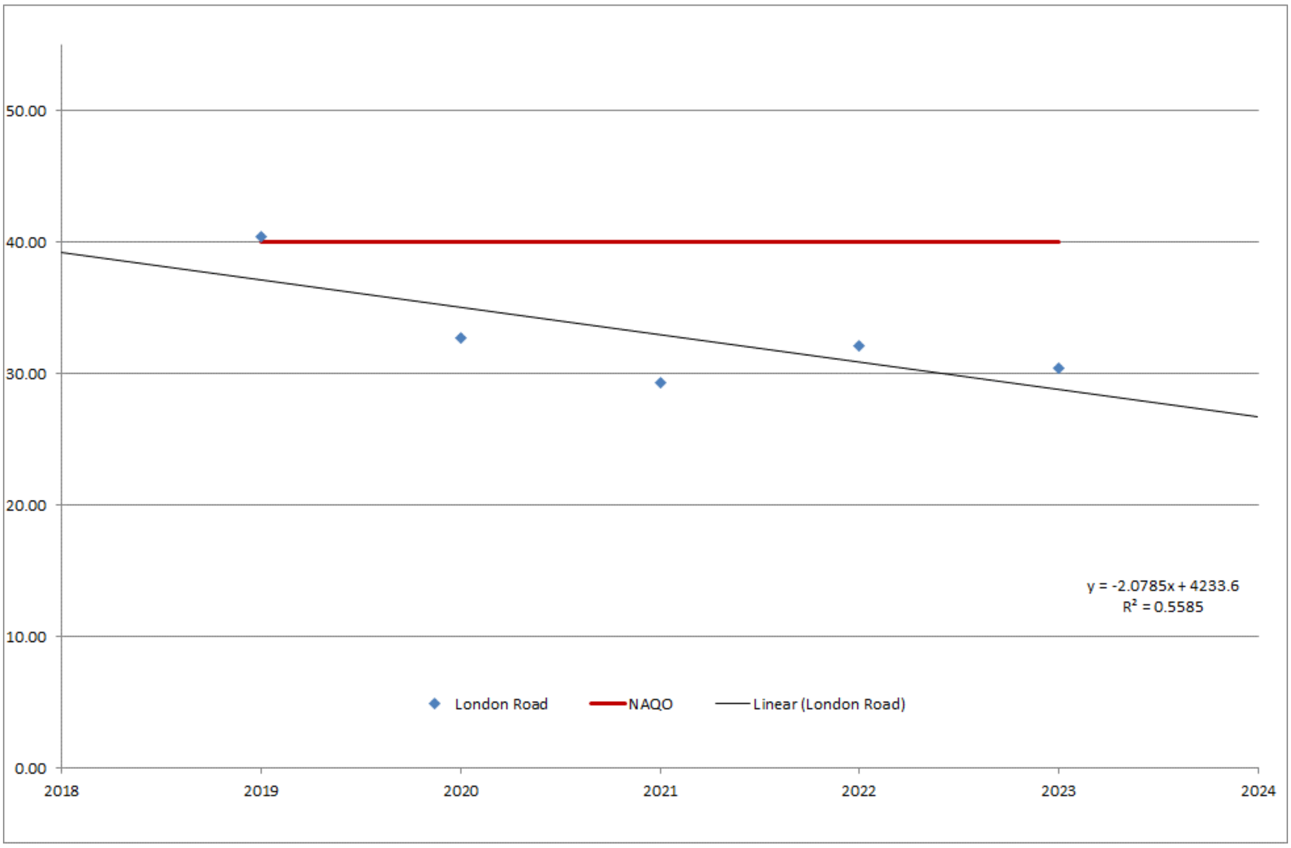
Figure F.156: Anglesea Road across from DEFRA station (AnR-Cross from CAQMS DEFRA).



CAQMS's trends of the Annual Mean NO_2 Concentrations

In this section the trends in Annual Mean NO_2 concentrations are illustrated for a 5 long-term CAQMSs data from **Figure F157 to F162**.

Figure F.157: London Road CAQMS NO_2 Annual Mean (LR-C2)



Summary

No exceedance, short-term "beneficial", long-term "downward".

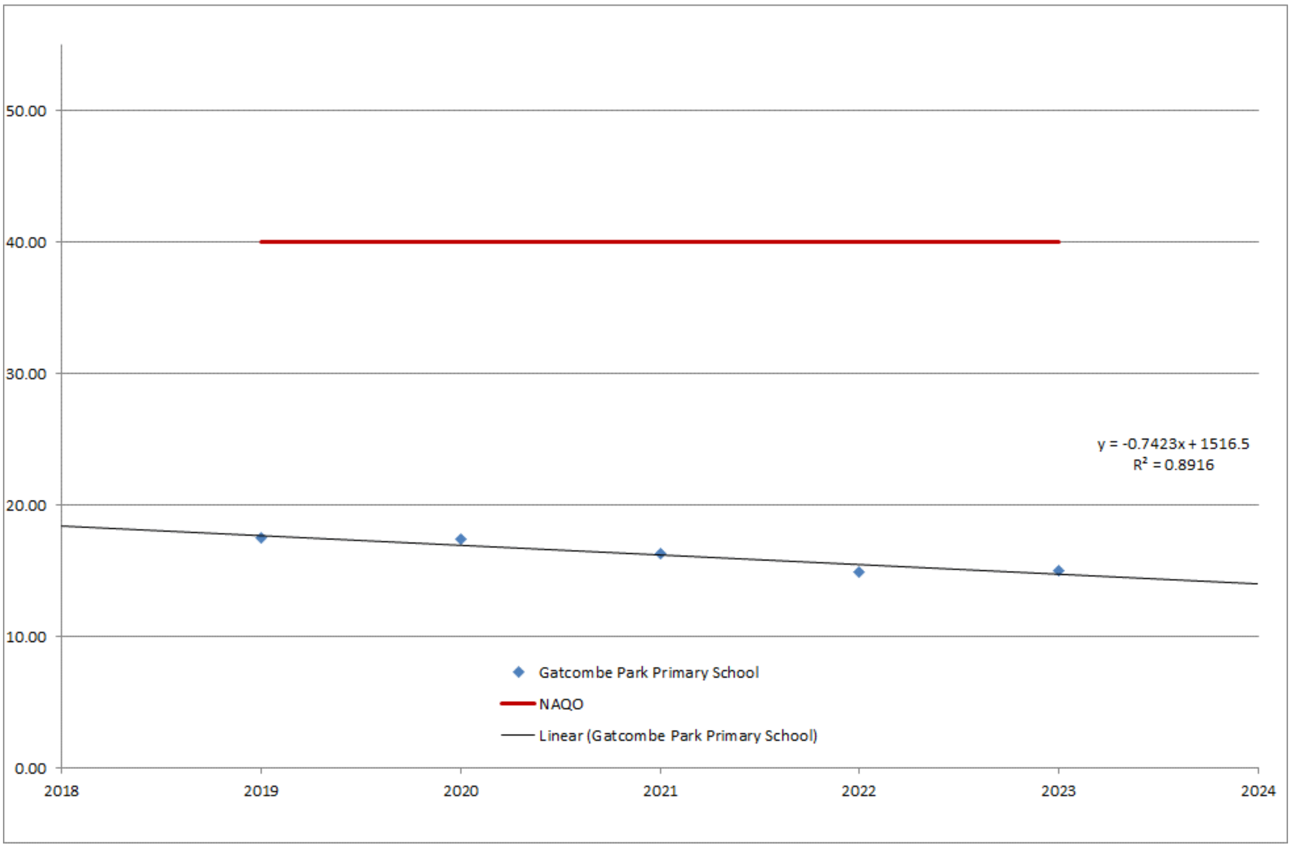
1. The NO_2 Annual Mean at this kerbside monitoring location decreased by 1.72µg/m^3 (a decrease of 5.37%) between 2022 and 2023 and remained below the NO_2 Annual Mean NAQO in 2023 (30.36µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 75.89%. Hence no breach of the NO_2 Annual Mean NAQO.

    b. In the short-term, the 2022-20223 NO_2 Annual Mean increase is described as "beneficial". Hence, a LAQ improvement.

    c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with to the previously reported 5-year trend.

Figure F.158: Gatcombe AURN CAQMS NO_2 Annual Mean (AURN-C4)



Summary

No exceedance, short-term "adverse", long-term "downward".

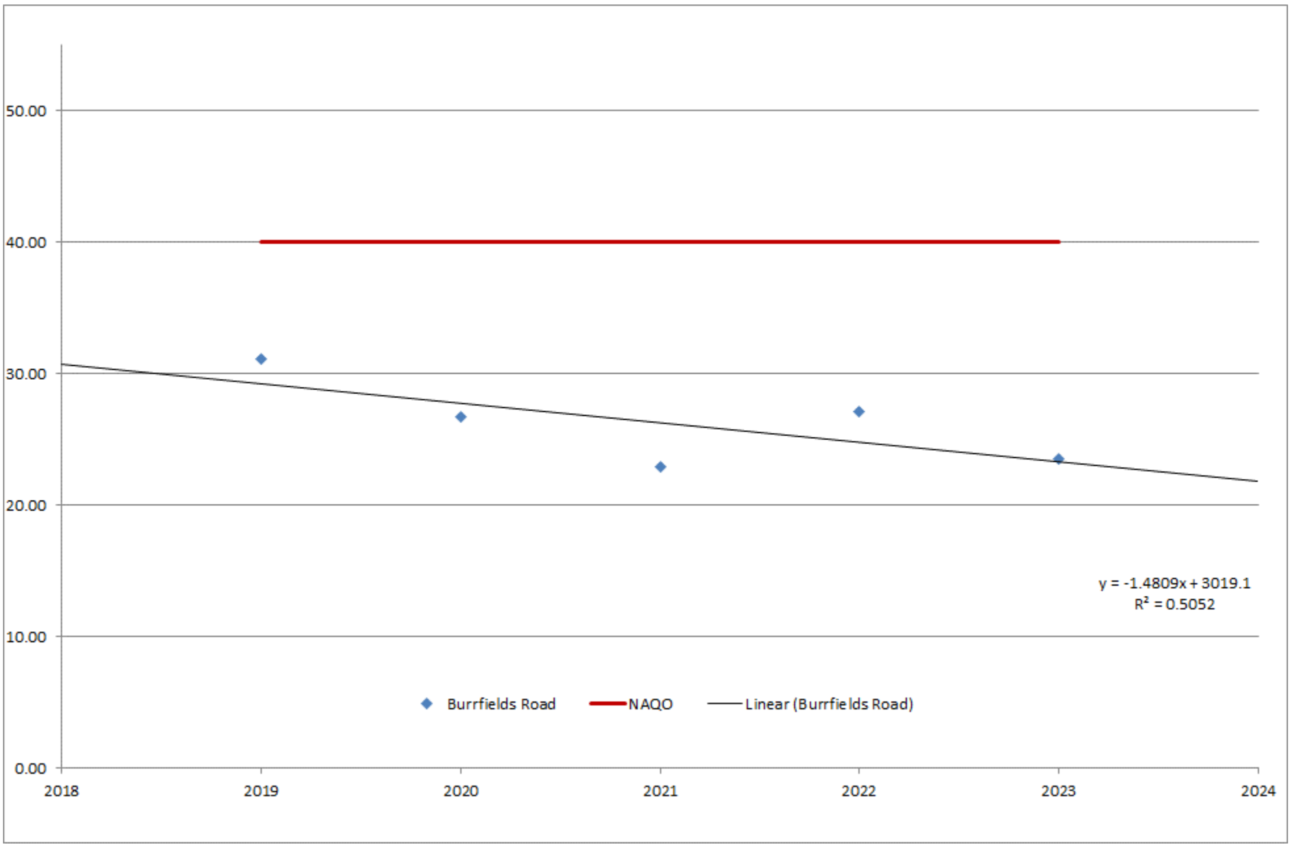
1. The NO_2 Annual Mean at this urban background monitoring location increased by 0.14µg/m^3 (an increase of 0.93%) between 2022 and 2023 and remained below the NAQO in 2023 (15.01µg/m^3) :

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 37.52%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "adverse". Hence, a LAQ deterioration.

    c. In the long-term, however, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with to the previously reported 5-year trend.

Figure F.159: Burrfields Road, CAQMS NO_2 Annual Mean (BR-C6)



Summary

No exceedance, short-term "beneficial", long-term "downward".

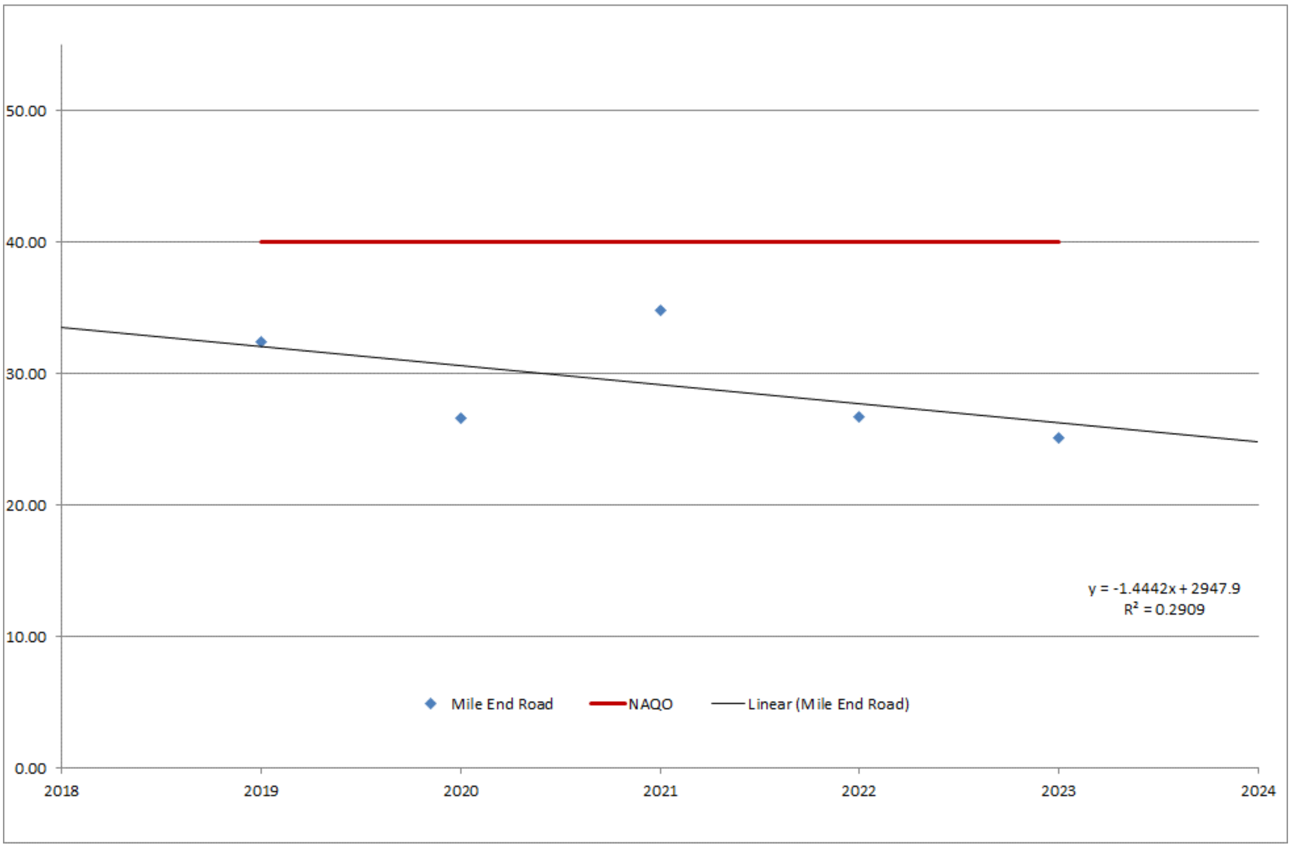
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 3.54µg/m³ a decrease of 13.07%) between 2022 and 2022 but remained below the NO_2 Annual Mean NAQO in 2023 (23.53µg/m³):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 58.83%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

    c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with to the previously reported 5-year trend.

Figure F.160: Mile End Road, CAQMS NO_2 Annual Mean (MER-C7)



Summary

No exceedance, short-term "beneficial", long-term "downward".

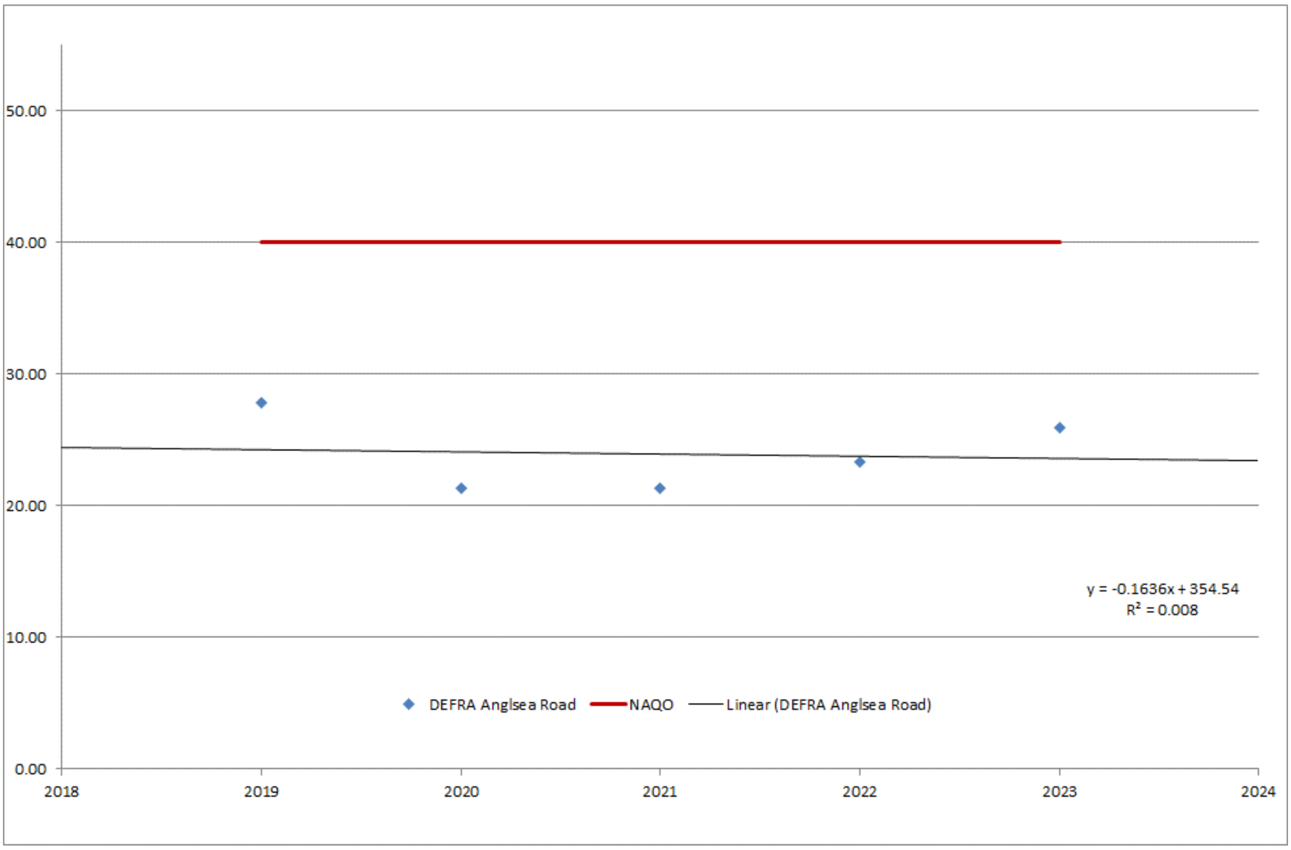
1. The NO_2 Annual Mean at this roadside monitoring location decreased by 1.59µg/m^3 (a decrease of 5.96%) between 2022 and 2023 but remained below the NO_2 Annual Mean NAQO in 2023 (25.14µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 62.85%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

    c. In the long-term, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with to the previously reported 5-year trend.

Figure F.161: Defra's Anglesea Road CAQMS NO_2 Annual Mean (Defra-C8)



Summary

No exceedance, short-term "adverse", long-term "downward".

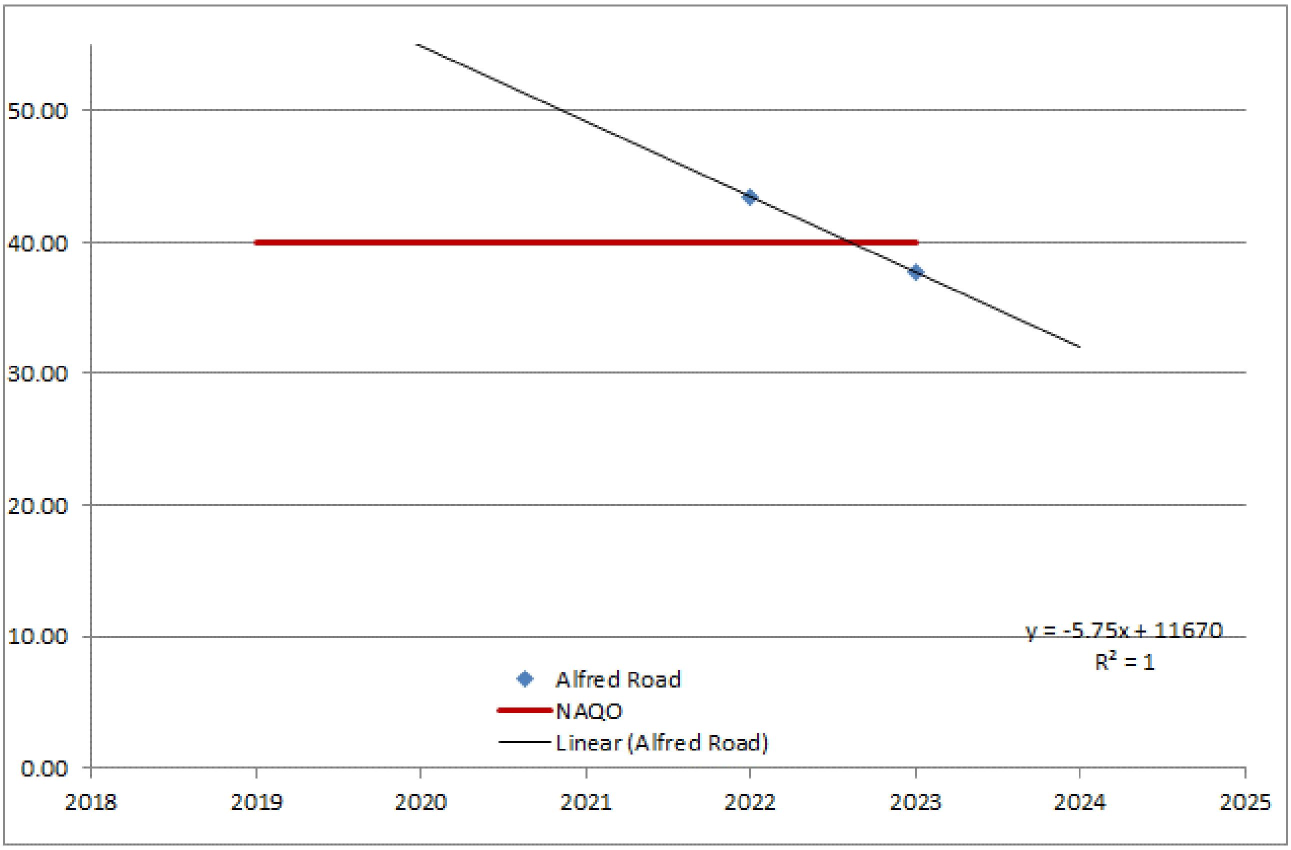
1. The NO_2 Annual Mean at this roadside monitoring location increased by 2.66µg/m^3 (an increase of 11.42%) between 2022 and 2023 but remained below the NAQO in 2023 (25.97µg/m^3):

    a. The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 64.93%.

    b. In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "adverse". Hence, a LAQ deterioration.

    c. In the long-term, however, the NO_2 Annual Mean "downward" trend in the last 5 years still exhibited a LAQ improvement that is consistent with to the previously reported 5-year trend.

Figure F.162: Alfred Road CAQMS NO_2 Annual Mean (AR-C9)



Summary

No exceedance, short-term "beneficial", long-term "downward".

1. The NO_2 Annual Mean at this roadside monitoring location decreased by 5.75µg/m^3 (a decrease of 13.23%) between 2022 and 2023 and propped bellow the NO_2 Annual Mean NAQO in 2023 (37.70µg/m^3):

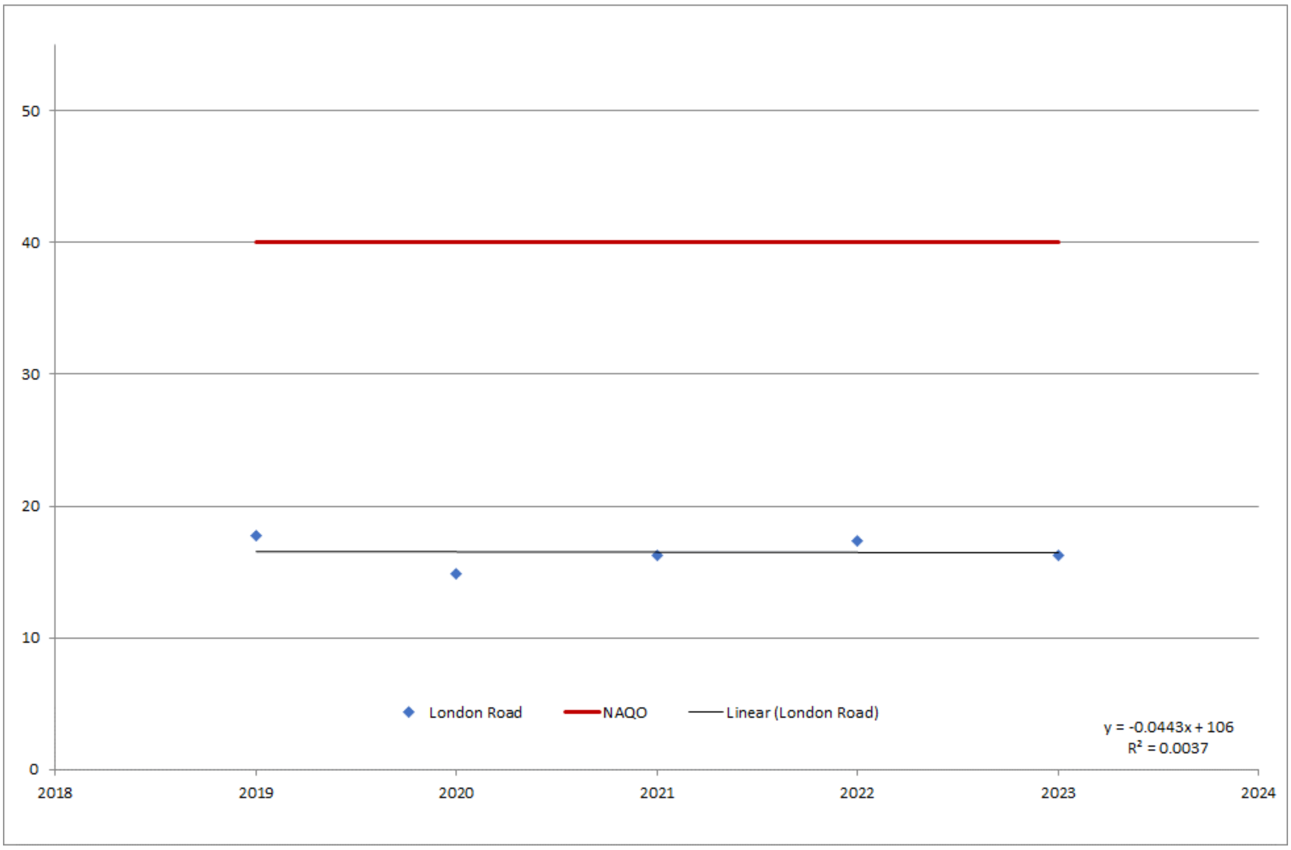
   a) The NO_2 Annual Mean at the monitored location as % of the NO_2 Annual Mean NAQO was 94.25%. Hence, the NO_2 Annual Mean is not in excess NO_2 Annual Mean NAQO.

   b) In the short-term, the 2022-2023 NO_2 Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

CAQMS's trends of the Annual Mean PM_{10} Concentrations

In this section the trends in Annual Mean PM_{10} concentrations are illustrated for a 5 long-term CAQMSs data from **Figure F163 to F168**

Figure F.163: London Road CAQMS PM_{10} Annual Mean (LR-C2)



Summary

No exceedance, short-term "beneficial", long-term "downward".

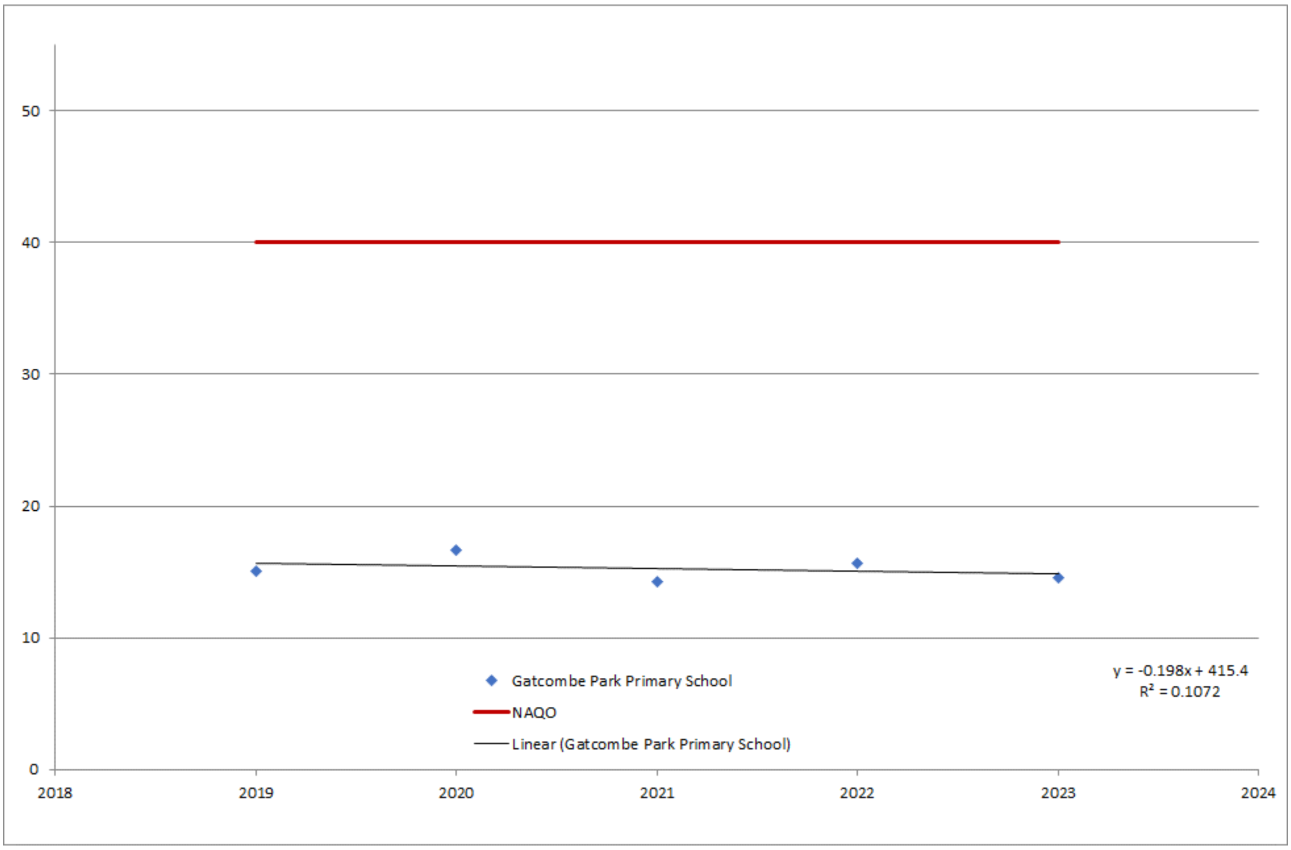
1. The PM_{10} Annual Mean decreased by 1.09µg/m^3 (a decrease of 6.25%) between 2022 and 2023 but remained below the PM_{10} Annual Mean NAQO in 2023 (16.30µg/m^3):

    a. The PM_{10} Annual Mean at the monitored location as % of the PM_{10} Annual Mean NAQO was 40.76%.

    b. In the short-term, the 2022-2023 PM_{10} Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

    c. In the long-term, the PM_{10} Annual Mean exhibited a "downward" trend in the last 5 years demonstrating a LAQ improvement in line with the previously reported 5-year trend.

Figure F.164: Gatcombe Park CAQMS PM_{10} Annual Mean (AURN-C4)



Summary

No exceedance, short-term "beneficial", long-term "downward".

1. The PM_{10} Annual Mean has remained considerably below the PM_{10} Annual Mean NAQO in the last 5 years.

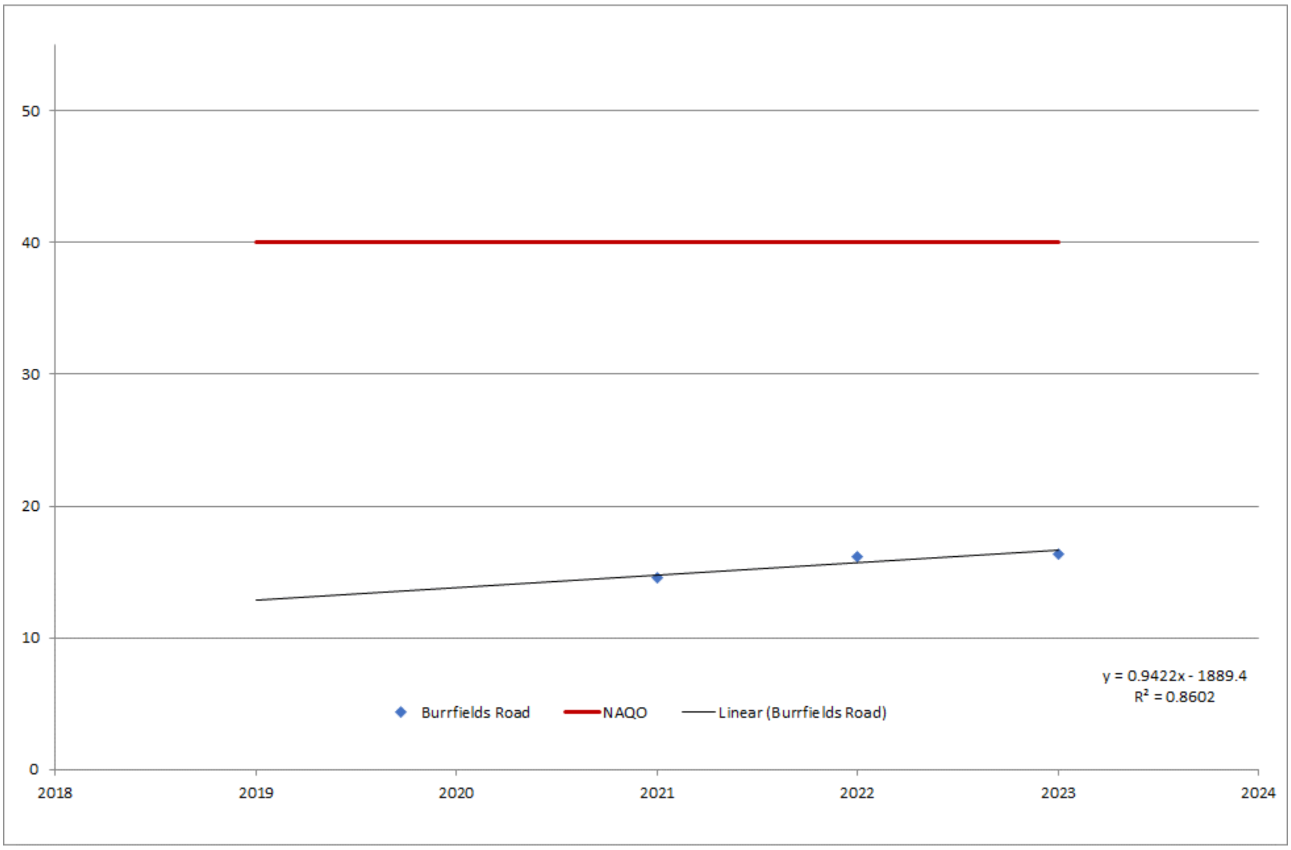
2. The PM_{10} Annual Mean at this urban-background monitoring location decreased by 1.15µg/m^3 (a decrease of 7.32%) between 2022 and 2023 and remains below the PM_{10} Annual Mean NAQO in 2023 (14.55µg/m^3):

    a. The PM_{10} Annual Mean at the monitored location as % of the PM_{10} Annual Mean NAQO was 36.37%.

    b. In the short-term, the 2022-2023 PM_{10} Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

    c. In the long-term, the PM_{10} Annual Mean exhibited a "downward" trend in the last 5 years representing a LAQ improvement.

Figure F.165: Burrfields Road CAQMS PM_{10} Annual Mean (BR-C6)



Summary

No exceedance, short-term "adverse", long-term "upward".

1. The PM_{10} Annual Mean has remained considerably below the PM_{10} Annual Mean NAQO in the third consecutive year.

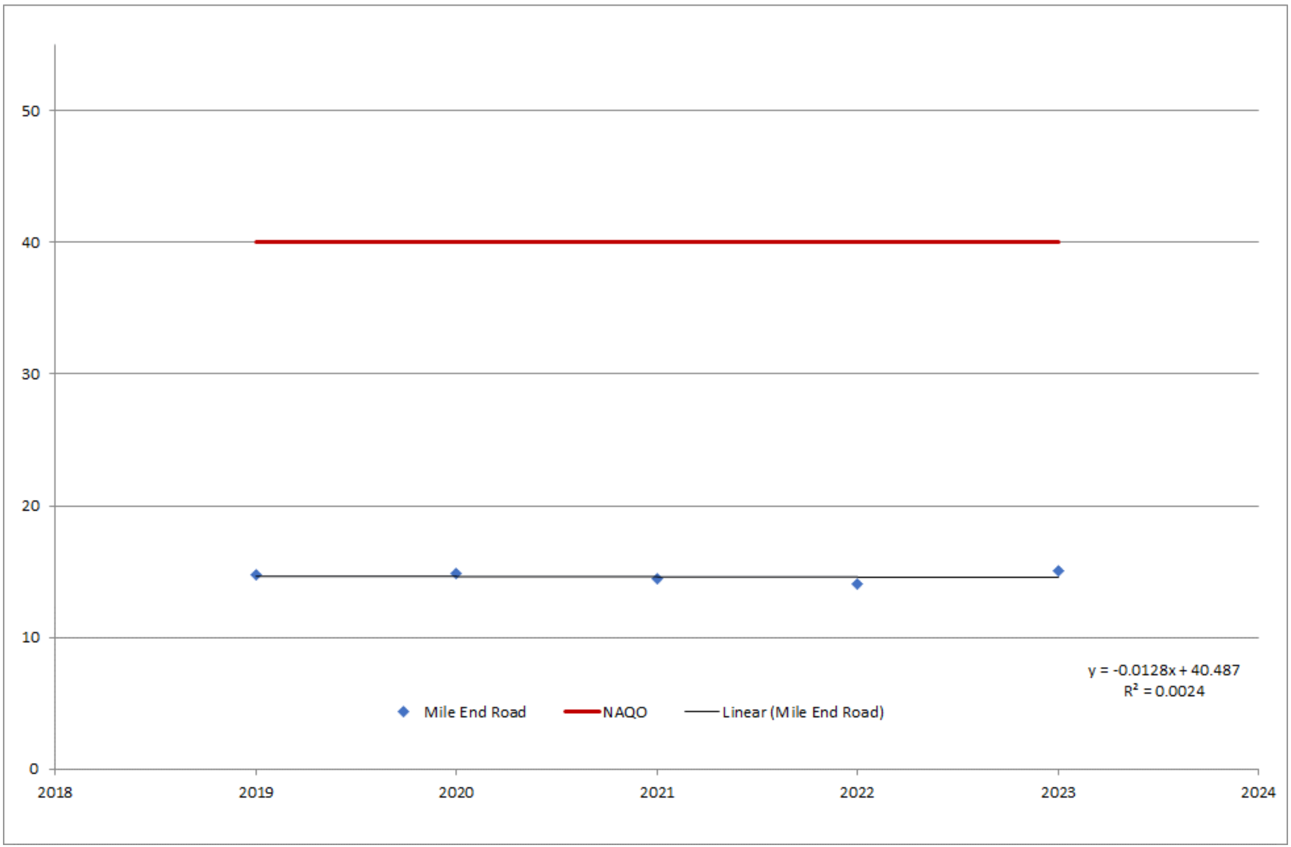
2. The PM_{10} Annual Mean at this roadside monitoring location increased by 0.28µg/m^3 (an increase of 1.76%) between 2022 and 2023 and remained below the NAQO in 2023 (16.4µg/m^3):

   a. The PM_{10} Annual Mean at the monitored location as % of the PM_{10} Annual Mean NAQO was 41.01%.

   b. In the short-term, the 2022-2023 PM_{10} Annual Mean change is "adverse". Hence, a LAQ deterioration.

   c. In the long-term, the PM_{10} Annual Mean still exhibited an "upward" trend in the last 5 years, demonstrating a LAQ deterioration.

Figure F.166: Mile End Road CAQMS PM_{10} Annual Mean (MER-C7)



Summary

No exceedance, short-term "adverse", long-term 'downward''.

1. The PM_{10} Annual Mean has remained considerably below the PM_{10} Annual Mean NAQO in the last 5 years.

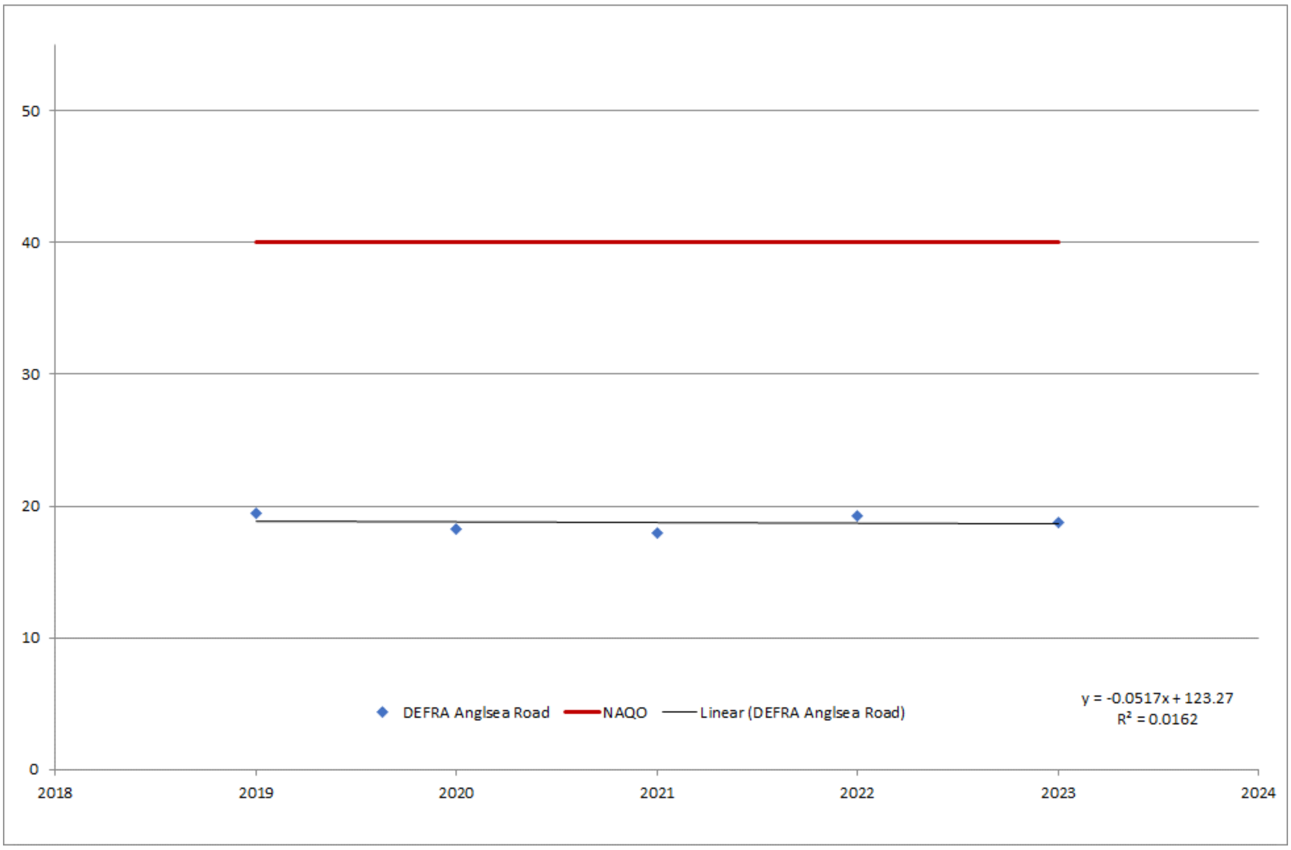
2. The PM_{10} Annual Mean at this roadside monitoring location increased by 1.07µg/m^3 (an increase of 7.59%) between 2022 and 2023 and remained below the PM_{10} Annual Mean NAQO in 2023 (15.11µg/m^3):

    a. The PM_{10} Annual Mean at the monitored location as % of the PM_{10} Annual Mean NAQO was 37.77%.

    b. In the short-term, the 2022-2023 PM_{10} Annual Mean change is "adverse". Hence, a LAQ deterioration.

    c. In the long-term, the PM_{10} Annual Mean exhibited a "downward" trend in the last 5 years representing a LAQ improvement.

Figure F.167: Anglesea Road CAQMS PM_{10} Annual Mean (DEFRA-C7)



Summary

No exceedance, short-term "beneficial", long-term "downward".

1. The PM_{10} Annual Mean at this roadside monitoring location decreased by 0.55µg/m^3 (a decrease of 2.85%) between 2022 and 2023 and remained below the PM_{10} Annual Mean NAQO in 2023 (18.72µg/m^3):

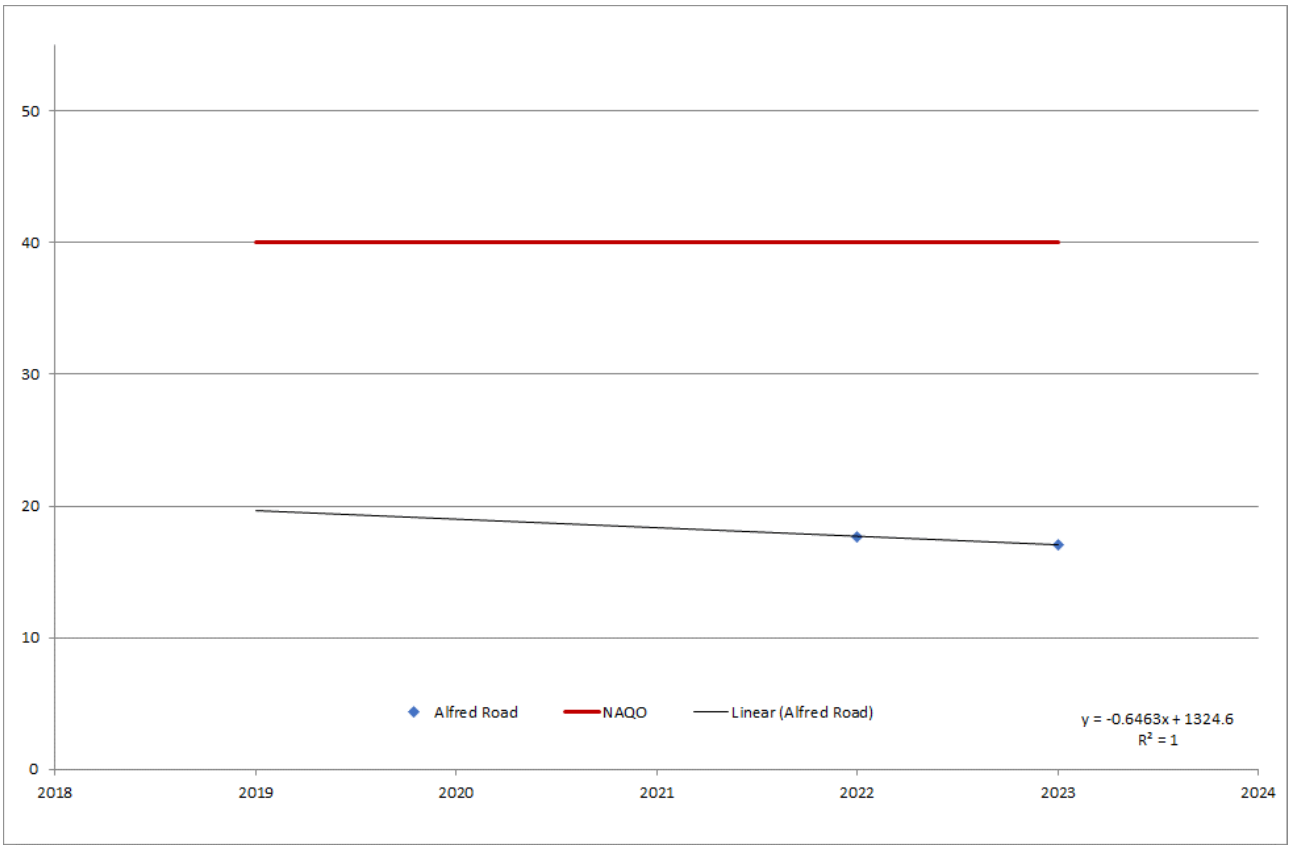
   a. The PM_{10} Annual Mean has remained considerably below the PM_{10} Annual Mean NAQO in the last 5 years.

   b. The PM_{10} Annual Mean at the monitored location as % of the PM_{10} Annual Mean NAQO was 46.80%.

   c. In the short-term, the 2022-2023 PM_{10} Annual Mean change is described as "beneficial". Hence, a .AQ improvement.

   d. In the long-term, the PM_{10} Annual Mean exhibited a "downward" trend in the last 5 years representing a LAQ improvement.

Figure F.168: Alfred Road CAQMS PM_{10} Annual Mean (AR-C8)



Summary

No exceedance, short-term "beneficial", long-term "downward".

1. The PM_{10} Annual Mean has remained considerably below the PM_{10} Annual Mean NAQO in the last two years.

2. The PM_{10} Annual Mean at this roadside monitoring location decreased by 0.65µg/m^3 (a decrease of 3.66%) between 2022 and 2023 and remained below the PM_{10} Annual Mean NAQO in 2023 (17.03µg/m^3):

    a. The PM_{10} Annual Mean at the monitored location as % of the PM_{10} Annual Mean NAQO was 42.58%.

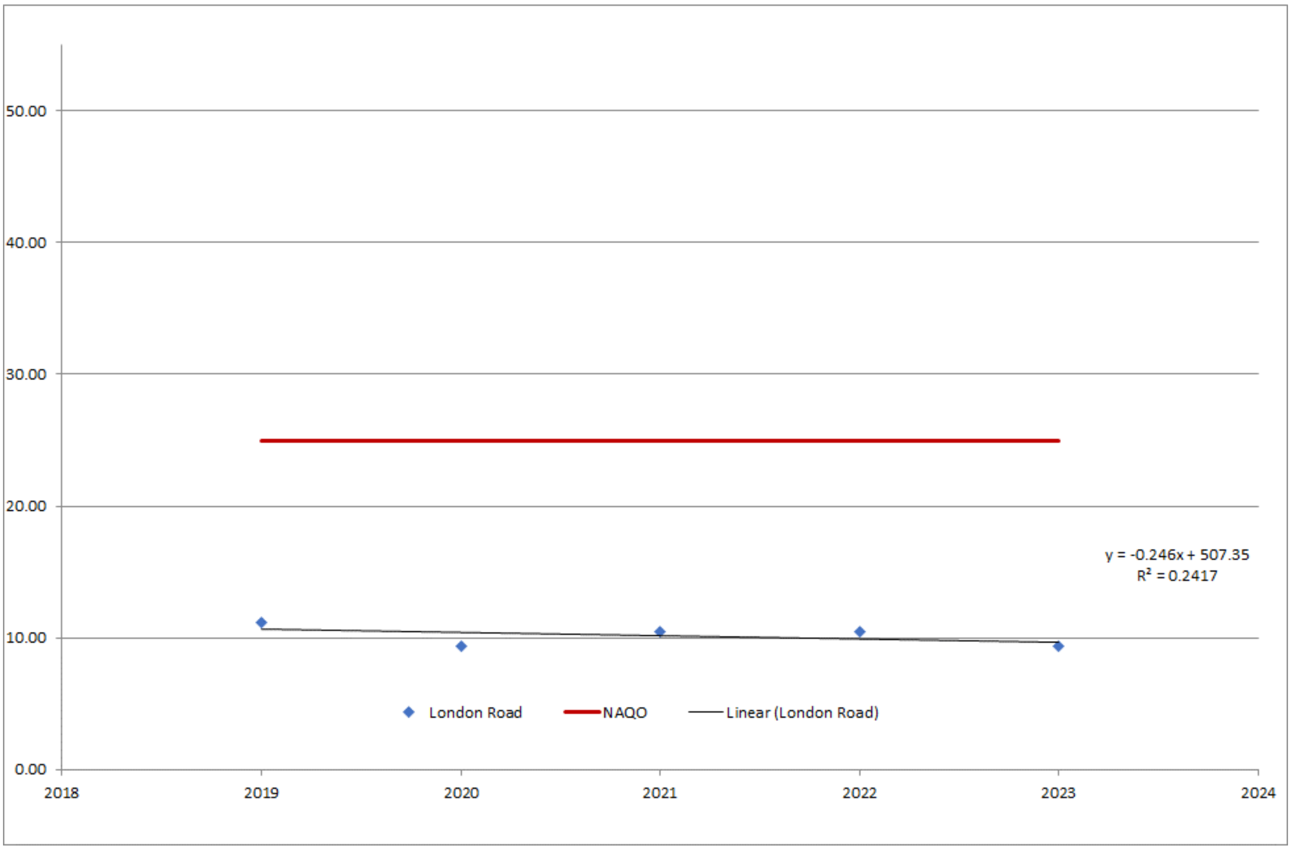
    b. In the short-term, the 2022-2023 PM_{10} Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

    c. In the long-term, the PM_{10} Annual Mean exhibited a "downward" trend in the last 5 years representing a LAQ improvement.

Figure A.3. CAQMS's trends of the Annual Mean $PM_{2.5}$ Concentrations

In this section the trends in Annual Mean $PM_{2.5}$ concentrations are illustrated for a three long-term CAQMSs data from **Figure F169 to F173**.

Figure F.169: London Road CAQMS $PM_{2.5}$ Annual Mean (LR-C2)



Summary

No exceedance, short-term "beneficial", long-term "downward".

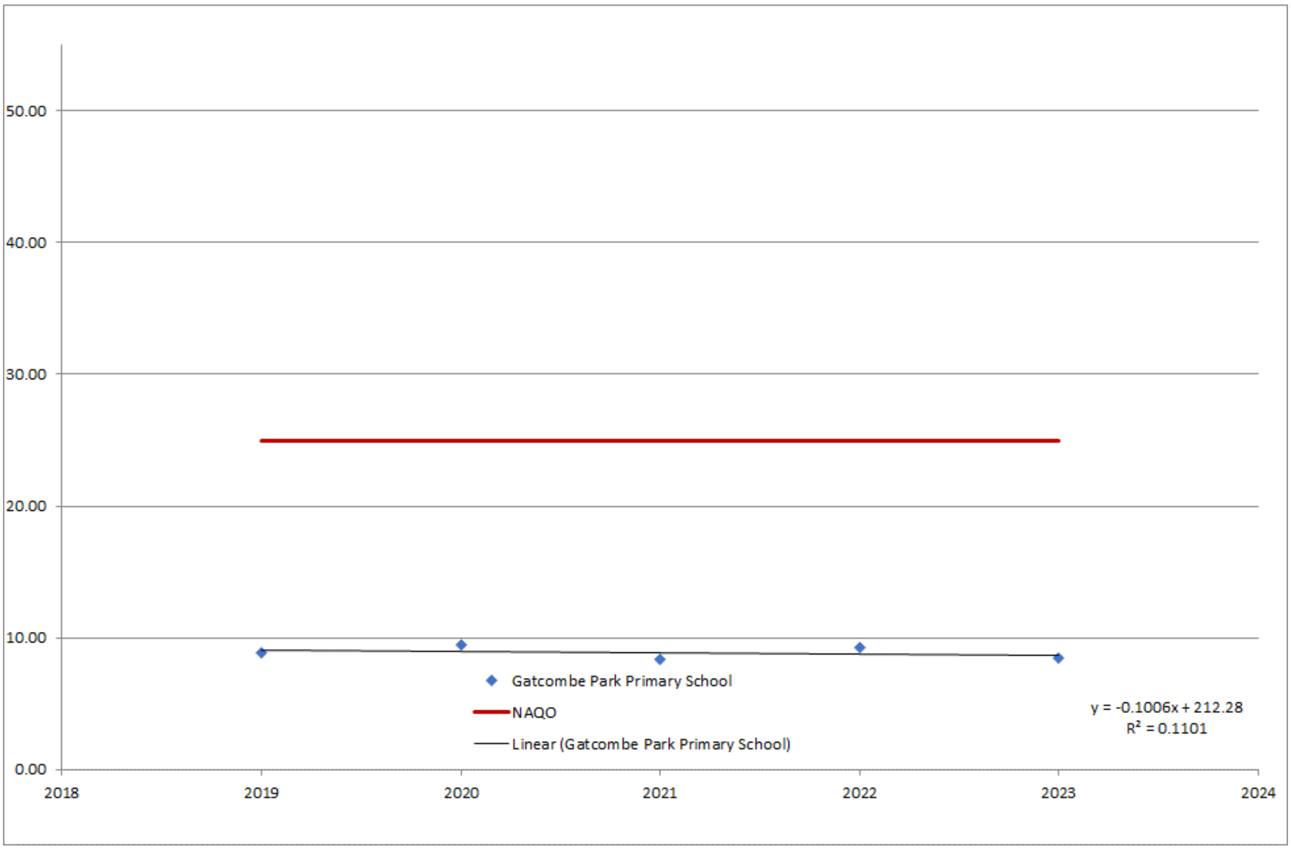
1. The $PM_{2.5}$ Annual Mean has remained considerably below the $PM_{2.5}$ Annual Mean NAQO in the last 5 years.

    a. In 2023 the $PM_{2.5}$ Annual Mean decreased by 1.07µg/m^3 (a decrease of 10.22%) between 2022 and 2023 (9.40 µg/m^3):

    b. In the short-term, the 2022-2023 $PM_{2.5}$ Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

    c. In the long-term, the $PM_{2.5}$ Annual Mean exhibited a "downward" trend in the last 5 years representing a LAQ improvement.

Figure F.170: Gatcombe Park CAQMS $PM_{2.5}$ Annual Mean (AURN-C4)



Summary

No exceedance, short-term "beneficial", long-term "downward".

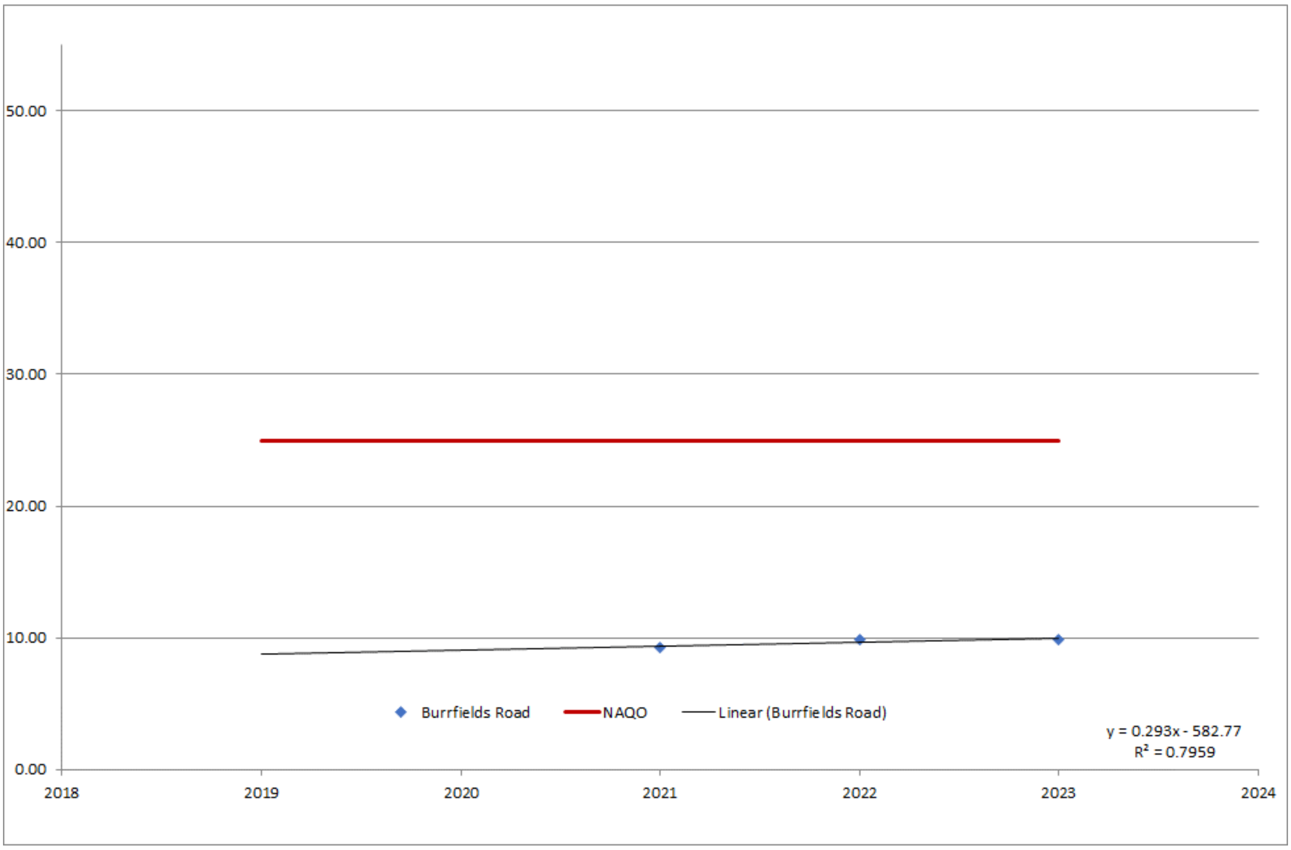
1. The $PM_{2.5}$ Annual Mean decreased by 0.77µg/m^3 (a decrease of 8.32%) between 2022 and 2023 (8.49µg/m^3):

    a. The $PM_{2.5}$ Annual Mean has remained considerably below the $PM_{2.5}$ Annual Mean NAQO for the fifth consecutive year.

    b. In the short-term, the 2022-2023 $PM_{2.5}$ Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

    c. In the long-term, the $PM_{2.5}$ Annual Mean exhibited a "downward" trend in the last 5 years representing a LAQ improvement.

Figure F.171: Burrfields Road CAQMS $PM_{2.5}$ Annual Mean (BR-C6)



Summary

No exceedance, short-term "adverse", long-term "upward".

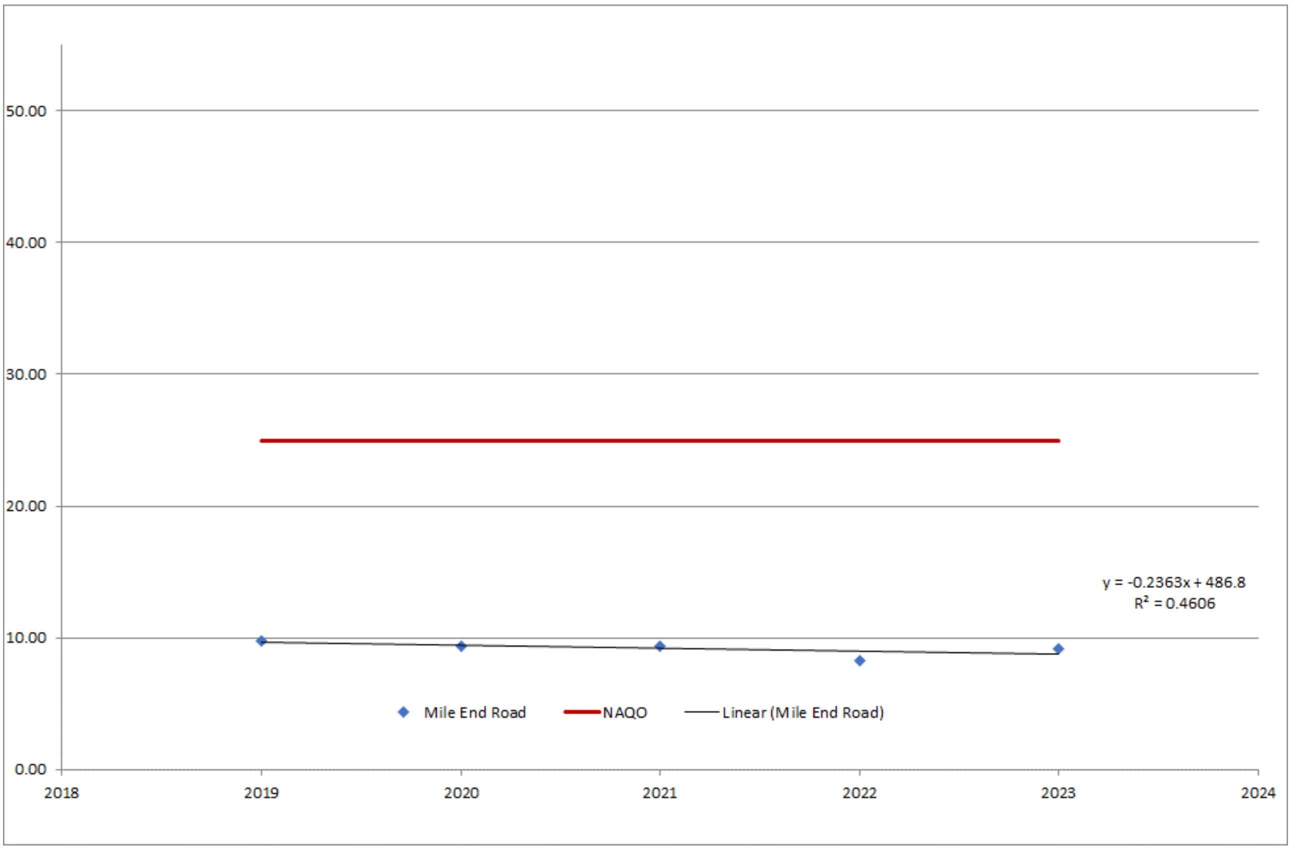
1. The $PM_{2.5}$ Annual Mean has remained considerably below the $PM_{2.5}$ Annual Mean NAQO for the third consecutive year.

    a. The $PM_{2.5}$ Annual Mean increased this year by 0.04µg/m^3 (an increase of 0.37%) between 2022 and 2023 (9.89µg/m^3) exhibiting a LAQ deterioration in the short-term.

    b. In the short-term, the 2022-2023 $PM_{2.5}$ Annual Mean change is "adverse". Hence, a LAQ improvement.

    c. In the long-term, the $PM_{2.5}$ Annual Mean represented an "upward" trend in the last three years demonstrating a LAQ improvement in the long-term. Hence, a LAQ improvement.

Figure F.172: Mile End Road CAQMS $PM_{2.5}$ Annual Mean (MER-C7)



Summary

No exceedance, short-term "adverse", long-term "downward".

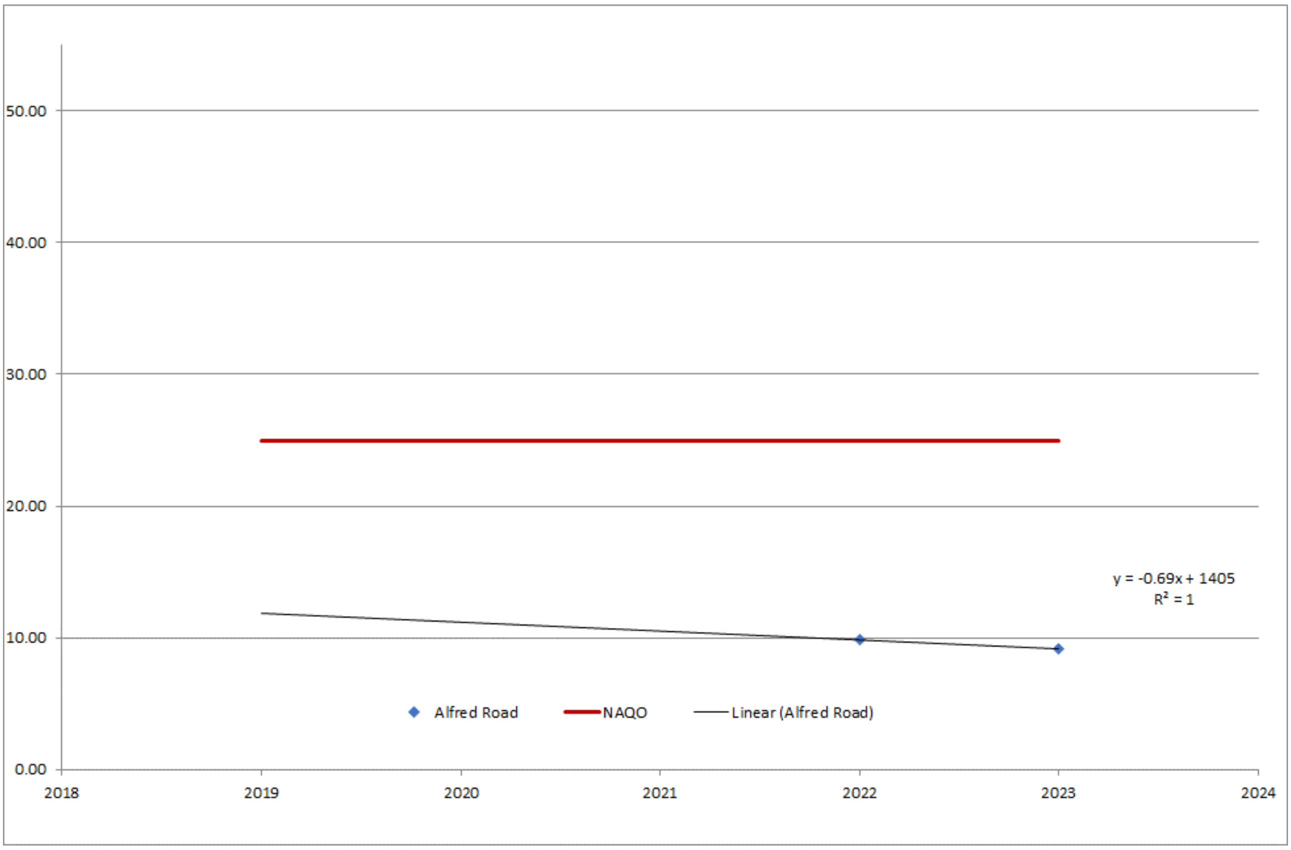
1. The $PM_{2.5}$ Annual Mean increased this year by 0.83µg/m^3 (an increase of 9.96%) between 2022 and 2023 (9.15µg/m^3):

    a. The $PM_{2.5}$ Annual Mean has remained considerably below the $PM_{2.5}$ Annual Mean NAQO for the fifth consecutive year.

    b. In the short-term, the 2022-2023 $PM_{2.5}$ Annual Mean change is "adverse". Hence, a LAQ improvement.

    c. In the long-term, the $PM_{2.5}$ Annual Mean exhibited a "downward" trend in the last 5 years representing a LAQ improvement.

Figure F.173: Alfred Road CAQMS $PM_{2.5}$ Annual Mean (AR-C9)



Summary

No exceedance, short-term "beneficial", long-term "downward".

1. The $PM_{2.5}$ Annual Mean decreased this year by 0.69µg/m^3 (a decrease of 7.02%) between 2022 and 2023 (9.14µg/m^3):

    a. The $PM_{2.5}$ Annual Mean has remained considerably below the $PM_{2.5}$ Annual Mean NAQO for the fifth consecutive year.

    b. In the short-term, the 2022-2023 $PM_{2.5}$ Annual Mean change is described as "beneficial". Hence, a LAQ improvement.

    c. In the long-term, the $PM_{2.5}$ Annual Mean exhibited a "downward" trend in the last 5 years representing a LAQ improvement.

Glossary of Terms

Abbreviation	Description
AAQD	Ambient Air Quality Directive
ANPR	Automatic Number Plate Recognition
AP	Air Pollution
AQ	Air Quality
AQAP	Air Quality Action Plan
AQB	Air Quality Board
AQG	Air Quality Grant
AQMA (s)	Air Quality Management Area (a) – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
AQS	Air Quality Strategy
AQSG	Air quality Steering Group
ASR	Annual Status Report
AURN	Automatic Urban and Rural Network
BAF(s)	Bias Adjustment Factor(s)
BSIP	Bus Service Improvement Plan
CAQMS	Continuous Air Quality Monitoring Station
CAZ	Clean Air Zone
DEFRA	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
EV	Electric Vehicle
FA	Further Assessment
FBS	Full Business Case
FDMS	Filter Dynamics Measurement System
HVO	Hydro-treated Vegetable Oil
JAQU	Joint Air Quality Unit
LA(s)	Local Authority (s)
LAQ	Local Air Quality
LAQAP	Local Authority Air Quality Action Plan
LAQM	Local Air Quality Management
LAQM.PG(16)	Local Air Quality Management. Policy Guidance (16)
LAQM.TG(16)	Local Air Quality Management. Technical Guidance (16)
LAQRA	Local Air Quality Review and Assessment
LAQS	Local Air Quality Strategy
LNG	Liquified Natural Gas
MD	Ministerial Direction
MOVA	Microprocessor Optimised Vehicle Actuation
NAQO	National Air Quality Objective
NDDT	Nitrogen Dioxide Diffusion Tubes
NDDTS	Nitrogen Dioxide Diffusion Tubes Survey
NHS	Nation Health Service
NO_2	Nitrogen Dioxides

NO_x	Nitrogen Oxides
OBC	Outline Business Case
PAQS	Portsmouth Air Quality Strategy
PCAN	Portsmouth Clean Air Network
PCC	Portsmouth City Council
PCM	Pollution Climate Mapping
PHE	Public Health England
PIP	Portsmouth International Port
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA / QC	Quality Assurance and Quality Control
R&A	Review and Assessment
RS	Regulatory Services
RSW	Report Submission Website
SAS	Source Apportionment Study
SOC	Strategic Outline Case
SO_2	Sulphur Dioxide
TFS	Targeted Feasibility Study
UK	United Kingdom

References

(Not including footnotes)

- Local Air Quality Management Technical Guidance LAQM.TG16. April 2021. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM.PG16. May 2016. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.